

|              |               |            |              |          |              |            |              |                   |
|--------------|---------------|------------|--------------|----------|--------------|------------|--------------|-------------------|
| 4            | 5 6<br>9      | 1 2<br>8 6 | 5<br>7 8 9   | 3        | 1 5<br>7 8 9 | 2<br>5     | 2 5 6<br>9 7 | 2 5 6<br>7 9      |
| 1 2 3<br>7   | 3<br>5        | 1 2<br>9   | 6            | 1 2<br>7 | 1 4 5<br>7 9 | 8          | 2 3<br>5     | 2 3<br>4 5<br>7 9 |
| 2 3<br>6     | 3<br>5 6<br>9 | 2<br>8 6   | 4 5<br>7 8 9 | 2<br>7 8 | 4 5<br>7 8 9 | 4 5<br>9 7 | 2 3<br>5 6   | 1                 |
| 1 2 3<br>6 4 | 3<br>6 4      | 1 2<br>6   | 3<br>7 8     | 5        | 1 3<br>7 8   | 2 3        | 9            | 2 3<br>7 8        |
| 1 2 3        | 8             | 5<br>9     | 4<br>7 9     | 3 1<br>7 | 1 3<br>4 7 9 | 6          | 1 2 3<br>5   | 2 3<br>7 5        |
| 1 3<br>6     | 7             | 5<br>9     | 2            | 1<br>8 6 | 1 3<br>6 8 9 | 3 1<br>4 5 | 1 3<br>5 8   | 4 5<br>8          |
| 6 4 6<br>8   | 4 6<br>8      | 1          | 9            | 2        | 7            | 5 3<br>5   | 3            | 3                 |
| 5            | 1 2           | 3          | 7 8          | 7 8 6    | 7 8 6        | 1 2<br>9   | 4            | 2<br>9            |
| 9            | 1 2           | 7          | 5 3          | 4        | 5 3          | 1 2        | 6            | 6                 |

|            |              |                |            |              |              |              |                |              |
|------------|--------------|----------------|------------|--------------|--------------|--------------|----------------|--------------|
| 7          | 1 2<br>6     | 8              | 4 5<br>9   | 4 5 6<br>9   | 4 5 6<br>9   | 3            | 1 4 5 6<br>5 9 | 1 2<br>5 9   |
| 4 6<br>9   | 3<br>6 4     | 3<br>6 4       | 2          | 4 5 6<br>9   | 1            | 4 6<br>7 9   | 4 5 6<br>7 8   | 5<br>7 8 9   |
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| 3          | 1 2<br>7     | 1 2<br>6 7     | 6 4<br>7 9 | 8            | 4 2<br>7 9   | 1 4<br>7 9   | 1 4 5<br>7     | 1 5<br>7     |
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|            |              |                |            |              |                |              |                |              |
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|              |              |              |              |              |              |              |                |                |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|
| 3<br>5 6     | 4            | 7 9          | 5 3<br>7 8   | 1 7          | 3 6          | 2            | 3 6<br>8 9     | 3 5 6<br>8 9   |
| 2 3<br>5 6   | 2 3<br>5 6   | 2 3<br>8     | 3 5<br>4 5 6 | 9            | 1 4 5        | 7            | 1 3<br>4 5 6   |                |
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|            |            |                |                |              |              |                |              |     |
|------------|------------|----------------|----------------|--------------|--------------|----------------|--------------|-----|
| 8          | 1          | 9              | 4 6<br>2 6 4 6 | 3            | 7 5<br>7     | 5              |              |     |
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| 1<br>9     | 7          | 1 5<br>8       | 5 3<br>8       | 4 5<br>8     | 3 1<br>8 9   | 2              | 6            |     |
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| 2<br>6 9   | 2 5<br>8 9 | 2 5 6<br>8     | 1 7<br>7 8     | 2 5 6<br>7 8 | 4 3          | 7 8 9          |              |     |
| 1<br>7 9   | 6          | 1 5 3<br>8     | 2 7<br>7 9     | 5 7<br>7 9   | 3 1<br>7 8 9 | 1 3<br>7 8 9   | 4            |     |
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|          |            |     |              |                |              |              |              |   |
|----------|------------|-----|--------------|----------------|--------------|--------------|--------------|---|
| 6        | 7 5<br>2 3 | 9   | 2 3<br>4 5   | 2 3<br>4 5     | 2 3<br>4 5   | 1 3<br>4 5   | 1 2<br>4 5   | 8 |
| 4 5<br>8 | 2 3<br>8   | 7   | 4 5<br>8     | 1              | 4 6<br>9     | 4 5 6<br>9   | 5 6<br>9     |   |
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|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
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|                           |                           |                           |                           |                           |                           |                           |                           |                           |
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|                           |                           |                           |                           |                           |                           |                           |                           |                           |
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|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
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| 6                         | <sup>5</sup> <sub>7</sub> | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>7</sub> | 1                         | <sup>5</sup> <sub>7</sub> | <sup>2</sup> <sub>3</sub> | 4                         | <sup>7</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> |
| 2                         | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>8</sub> | <sup>4</sup> <sub>6</sub> | <sup>3</sup> <sub>9</sub> | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>8</sub> | 1                         | <sup>3</sup> <sub>6</sub> | <sup>3</sup> <sub>7</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 5                         | <sup>8</sup> <sub>9</sub> | <sup>8</sup> <sub>9</sub> | 6                         | 1                         | 3                         | <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>7</sub> |
| <sup>1</sup> <sub>6</sub> | 2                         | <sup>1</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>5</sub> | 9                         | 8                         | 3                         |
| 3                         | <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>7</sub> | <sup>8</sup> <sub>9</sub> | 2                         | <sup>8</sup> <sub>9</sub> | 1                         | 6                         | 5                         |
| <sup>6</sup> <sub>8</sub> | 1                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>8</sub> | 9                         | <sup>4</sup> <sub>5</sub> | <sup>5</sup> <sub>7</sub> | <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>7</sub> |
| <sup>2</sup> <sub>8</sub> | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>5</sub> | 3                         | <sup>4</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>7</sub> | <sup>1</sup> <sub>9</sub> | 6                         |
| 7                         | <sup>3</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>6</sub> | <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>9</sub> | 4                         |
| <sup>1</sup> <sub>6</sub> | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | 8                         | <sup>1</sup> <sub>4</sub> | 2                         | 5                         | <sup>1</sup> <sub>7</sub> |
| 4                         | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | 7                         | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>6</sup> <sub>8</sub> | 3                         | <sup>1</sup> <sub>8</sub> |
| <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> | 3                         | <sup>1</sup> <sub>2</sub> | <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>7</sub> | <sup>1</sup> <sub>7</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 8                         | 5                         | 7                         | <sup>6</sup> <sub>9</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>6</sub> | 4                         | 1                         | 3                         |
| 9                         | <sup>2</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | 3                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>8</sub> | 5                         | <sup>2</sup> <sub>7</sub> | <sup>6</sup> <sub>7</sub> |
| 3                         | <sup>2</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> | 5                         | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>6</sub> | <sup>6</sup> <sub>7</sub> |
| <sup>2</sup> <sub>5</sub> | 4                         | 8                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>6</sub> | 7                         | <sup>1</sup> <sub>3</sub> | <sup>3</sup> <sub>1</sub> |
| 7                         | <sup>3</sup> <sub>9</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>3</sub> | 5                         | 2                         |
| <sup>2</sup> <sub>5</sub> | 1                         | <sup>3</sup> <sub>6</sub> | <sup>5</sup> <sub>6</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | 7                         | <sup>4</sup> <sub>8</sub> | <sup>4</sup> <sub>8</sub> |
| 6                         | <sup>3</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | 2                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>3</sub> | <sup>4</sup> <sub>7</sub> | 5                         |
| <sup>1</sup> <sub>4</sub> | 7                         | <sup>2</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>6</sub> | 8                         | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>6</sub> |
| <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | <sup>2</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>6</sub> |

|   |   |   |  |  |  |  |  |  |
|---|---|---|--|--|--|--|--|--|
| 4   | <sup>6</sup> <sub>8</sub>                           | 3   | 5                                      | 9  | <sup>7</sup> <sub>8</sub>  | <sup>1</sup> <sub>7</sub>              | 2  | <sup>1</sup> <sub>7</sub> <sup>6</sup> <sub>8</sub>              |
| <sup>5</sup> <sub>8</sub> <sup>9</sup>              | <sup>2</sup> <sub>5</sub> <sup>8</sup>              | <sup>2</sup> <sub>5</sub> <sup>8</sup> <sup>9</sup> | <sup>2</sup> <sub>7</sub> <sup>8</sup> | 1  | 6  | <sup>4</sup> <sub>7</sub> <sup>3</sup> | <sup>4</sup> <sub>5</sub> <sup>3</sup> <sub>8</sub>              | <sup>4</sup> <sub>5</sub> <sup>3</sup> <sub>7</sub> <sup>8</sup> |
| 7   | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sub>8</sub> | 1   | <sup>2</sup> <sub>8</sub>              | <sup>3</sup> <sub>4</sub>  | <sup>3</sup> <sub>4</sub>  | 9                                      | <sup>5</sup> <sub>6</sub> <sup>8</sup>                           | <sup>5</sup> <sub>6</sub> <sup>8</sup>                           |
| <sup>1</sup> <sub>3</sub>                           | <sup>4</sup> <sub>7</sub>                           | 6   | <sup>1</sup> <sub>7</sub>              | 8  | 9  | 5                                      | <sup>1</sup> <sub>4</sub> <sup>3</sup>                           | 2  |
| <sup>1</sup> <sub>5</sub> <sup>9</sup>              | <sup>4</sup> <sub>5</sub> <sup>7</sup>              | <sup>5</sup> <sub>9</sub>                           | 3                                      | <sup>2</sup> <sub>4</sub> <sup>5</sup> <sup>7</sup>              | <sup>1</sup> <sub>2</sub> <sup>4<sup>5</sup><sup>7</sup></sup>             | 8                                      | <sup>1</sup> <sub>4</sub> <sup>6</sup> <sup>9</sup>              | <sup>1</sup> <sub>6</sub> <sup>7</sup>                           |
| 2   | <sup>4</sup> <sub>5</sub> <sup>7</sup> <sup>8</sup> | <sup>3</sup> <sub>5</sub> <sup>8</sup> <sup>9</sup> | 6                                      | <sup>4</sup> <sub>5</sub> <sup>7</sup>                           | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sup>7</sup>                        | <sup>1</sup> <sub>3</sub> <sup>4</sup> | <sup>1</sup> <sub>3</sub> <sup>4</sup>                           | <sup>1</sup> <sub>3</sub> <sup>4</sup>                           |
| <sup>3</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> | <sup>2</sup> <sub>3</sub> <sup>5</sup> <sup>8</sup> | <sup>2</sup> <sub>5</sub> <sup>8</sup>              | 4                                      | <sup>3</sup> <sub>5</sub> <sup>6</sup>                           | <sup>1</sup> <sub>5</sub> <sup>8</sup>                                     | <sup>1</sup> <sub>3</sub>              | 7  | 9  |
| <sup>3</sup> <sub>5</sub> <sup>8</sup>              | 9   | <sup>4</sup> <sub>7</sub>                           | <sup>1</sup> <sub>7</sub> <sup>8</sup> | <sup>2</sup> <sub>3</sub> <sup>5</sup> <sup>7</sup> <sup>8</sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>5</sup><sup>7</sup><sup>8</sup></sup> | 6                                      | <sup>1</sup> <sub>4</sub> <sup>3</sup> <sup>5</sup> <sup>8</sup> | <sup>1</sup> <sub>3</sub> <sup>4<sup>5</sup><sup>8</sup></sup>   |
| <sup>3</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> | 1   | <sup>4</sup> <sub>7</sub>                           | 9                                      | <sup>3</sup> <sub>5</sub> <sup>6</sup>                           | <sup>3</sup> <sub>5</sub> <sup>7</sup> <sup>8</sup>                        | 2                                      | <sup>4</sup> <sub>5</sub> <sup>8</sup>                           | <sup>4</sup> <sub>5</sub> <sup>8</sup>                           |

|  |  |  |  |  |  |   |  |  |
|--|--|--|--|--|--|---|--|--|
| <sup>3</sup> <sub>6</sub>              | 5  | <sup>1</sup> <sub>7</sub> <sup>6</sup>                           | 4  | <sup>1</sup> <sub>2</sub> <sup>3</sup>   | 9  | <sup>7</sup> <sub>8</sub> <sup>6</sup>              | <sup>2</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup>              | <sup>2</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup>              |
| <sup>4</sup> <sub>8</sub> <sup>9</sup> | <sup>4</sup> <sub>7</sub> <sup>8</sup>                         | <sup>4</sup> <sub>7</sub> <sup>9</sup>                           | 6  | <sup>2</sup> <sub>3</sub> <sup>5</sup>   | <sup>2</sup> <sub>3</sub> <sup>5</sup> <sup>8</sup>  | <sup>4</sup> <sub>9</sub>                           | <sup>2</sup> <sub>5</sub> <sup>7</sup> <sup>8</sup>              | 1  |
| 2                                      | <sup>1</sup> <sub>4</sub> <sup>7</sup> <sup>8</sup>            | <sup>1</sup> <sub>4</sub> <sup>6</sup> <sup>7</sup> <sup>9</sup> | <sup>1</sup> <sub>7</sub> <sup>8</sup>   | <sup>1</sup> <sub>5</sub>  | <sup>1</sup> <sub>5</sub> <sup>7</sup> <sup>8</sup>  | 3   | <sup>5</sup> <sub>6</sub> <sup>4</sup> <sup>9</sup>              |  |
| 7                                      | <sup>4</sup> <sub>8</sub> <sup>9</sup>                         | 3  | <sup>1</sup> <sub>8</sub> <sup>9</sup>   | <sup>1</sup> <sub>4</sub> <sup>6</sup> <sup>9</sup>  | <sup>1</sup> <sub>8</sub>  | 2   | <sup>1</sup> <sub>6</sub> <sup>8</sup>                           | 5  |
| <sup>4</sup> <sub>6</sub> <sup>8</sup> | <sup>2</sup> <sub>4</sub> <sup>6</sup>                         | 5  | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>4</sub> <sup>7</sup> <sup>8</sup> | 9  | <sup>4</sup> <sub>7</sub> <sup>8</sup>                           |
| 1                                      | <sup>2</sup> <sub>4</sub> <sup>8</sup> <sup>9</sup>            | 5  | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sup>6</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>                     | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sup>6</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>                     | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sup>6</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>                     | <sup>4</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup> | <sup>3</sup> <sub>6</sub> <sup>4</sup> <sup>7</sup> <sup>8</sup> | <sup>3</sup> <sub>6</sub> <sup>4</sup> <sup>7</sup> <sup>8</sup> |
| <sup>3</sup> <sub>9</sub>              | 6  | 8  | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup><sup>5</sup><sup>6</sup><sup>7</sup><sup>8</sup><sup>9</sup></sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup><sup>5</sup><sup>6</sup><sup>7</sup><sup>8</sup><sup>9</sup></sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup><sup>5</sup><sup>6</sup><sup>7</sup><sup>8</sup><sup>9</sup></sup> | <sup>1</sup> <sub>7</sub> <sup>9</sup>              | 4  | <sup>2</sup> <sub>3</sub> <sup>7</sup> <sup>9</sup>              |
| <sup>4</sup> <sub>5</sub> <sup>9</sup> | <sup>3</sup> <sub>1</sub> <sup>2<sup>3<sup>4</sup></sup></sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>               | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>5</sub> <sup>6</sup> <sup>9</sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>6</sup><sup>9</sup></sup>   | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sup>9</sup>              |
| <sup>4</sup> <sub>5</sub> <sup>9</sup> | <sup>3</sup> <sub>1</sub> <sup>2<sup>3<sup>4</sup></sup></sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>               | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup></sup>   | <sup>1</sup> <sub>5</sub> <sup>6</sup> <sup>9</sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>6</sup><sup>9</sup></sup>   | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sup>9</sup>              |

|  |                           |   |  |  |  |  |   |   |
|--|---------------------------|---|--|--|--|--|---|---|
| 8                                      | 2                         | 7   | <sup>3</sup> <sub>6</sub> <sup>9</sup>                           | <sup>3</sup> <sub>6</sub> <sup>9</sup>                           | <sup>3</sup> <sub>6</sub> <sup>9</sup>                         | 4  | 1   | 5   |
| 9                                      | 5                         | <sup>1</sup> <sub>4</sub>                           | 2  | <sup>1</sup> <sub>4</sub> <sup>7</sup> <sup>8</sup>              | <sup>1</sup> <sub>4</sub> <sup>8</sup>                         | <sup>3</sup> <sub>6</sub>  | <sup>3</sup> <sub>7</sub> <sup>8</sup>              | <sup>6</sup> <sub>7</sub> <sup>8</sup>              |
| 3                                      | 6                         | <sup>1</sup> <sub>4</sub>                           | <sup>1</sup> <sub>4</sub> <sup>7</sup> <sup>8</sup>              | 5  | <sup>1</sup> <sub>4</sub> <sup>8</sup>                         | 2  | <sup>2</sup> <sub>9</sub>                           | <sup>7</sup> <sub>8</sub> <sup>9</sup>              |
| <sup>2</sup> <sub>5</sub>              | 4                         | 8   | <sup>1</sup> <sub>3</sub> <sup>6</sup> <sup>9</sup>              | <sup>1</sup> <sub>2</sub> <sup>3<sup>6</sup></sup>               | 7  | <sup>1</sup> <sub>5</sub> <sup>3</sup> <sup>9</sup>                        | <sup>5</sup> <sub>9</sub> <sup>3</sup> <sup>1</sup> | <sup>9</sup>  |
| <sup>5</sup> <sub>7</sub>              | <sup>3</sup> <sub>9</sub> | <sup>3</sup> <sub>9</sub>                           | <sup>1</sup> <sub>4</sub> <sup>8</sup>                           | <sup>1</sup> <sub>4</sub> <sup>8</sup>                           | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sup>8</sup>            | <sup>1</sup> <sub>5</sub> <sup>7</sup>                                     | 6   | 2   |
| <sup>2</sup> <sub>5</sub> <sup>7</sup> | 1                         | 6   | <sup>3</sup> <sub>9</sub>  | <sup>2</sup> <sub>3</sub> <sup>5</sup>                           | <sup>2</sup> <sub>3</sub> <sup>5</sup>                         | <sup>3</sup> <sub>5</sub> <sup>9</sup>                                     | <sup>4</sup> <sub>8</sub>                           | <sup>4</sup> <sub>8</sub>                           |
| 6                                      | <sup>8</sup> <sub>9</sub> | <sup>2</sup> <sub>9</sub>                           | 5  | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sup>7</sup> <sup>8</sup> | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sup>8</sup>            | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sup>9</sup>                        | <sup>2</sup> <sub>7</sub> <sup>9</sup>              | 3   |
| <sup>1</sup> <sub>4</sub>              | 7                         | <sup>2</sup> <sub>3</sub> <sup>5</sup> <sup>9</sup> | <sup>1</sup> <sub>4</sub> <sup>3</sup> <sup>6</sup> <sup>9</sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup><sup>6</sup></sup>   | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup><sup>6</sup></sup> | 8  | <sup>2</sup> <sub>4</sub> <sup>5</sup> <sup>9</sup> | <sup>1</sup> <sub>4</sub> <sup>6</sup> <sup>9</sup> |
| <sup>1</sup> <sub>4</sub>              | <sup>3</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> <sup>5</sup>              | <sup>1</sup> <sub>4</sub> <sup>3</sup> <sup>6</sup> <sup>9</sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup><sup>6</sup></sup>   | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup><sup>6</sup></sup> | <sup>1</sup> <sub>2</sub> <sup>3<sup>5</sup><sup>6</sup><sup>9</sup></sup> | <sup>2</sup> <sub>4</sub> <sup>5</sup> <sup>9</sup> | <sup>1</sup> <sub>4</sub> <sup>6</sup>              |

|  |  |   |                           |  |   |   |  |  |
|--|--|---|---------------------------|--|---|---|--|--|
| 5                                      | 6                                      | 7   | <sup>2</sup> <sub>4</sub> | 9                                      | <sup>2</sup> <sub>4</sub>                           | <sup>1</sup> <sub>8</sub>                           | 3                                      | <sup>1</sup> <sub>8</sub>              |
| <sup>2</sup> <sub>9</sub>              | <sup>3</sup> <sub>9</sub>              | <sup>2</sup> <sub>3</sub> <sup>9</sup>              | 8                         | 6                                      | 1   | <sup>5</sup> <sub>7</sub>                           | 4                                      | <sup>5</sup> <sub>7</sub>              |
| 1                                      | 4                                      | 8   | 3                         | 7                                      | 5   | 9   | <sup>2</sup> <sub>6</sub>              | <sup>2</sup> <sub>6</sub>              |
| 6                                      | 2                                      | <sup>5</sup> <sub>3</sub>                           | 1                         | 4                                      | 8   | <sup>5</sup> <sub>7</sub> <sup>3</sup>              | <sup>7</sup> <sub>9</sub> <sup>5</sup> | <sup>7</sup> <sub>9</sub> <sup>5</sup> |
| <sup>4</sup> <sub>9</sub>              | <sup>3</sup> <sub>5</sub> <sup>9</sup> | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sup>9</sup> | 7                         | <sup>3</sup> <sub>5</sub> <sup>6</sup> | <sup>2</sup> <sub>4</sub> <sup>5</sup> <sup>6</sup> | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sup>6</sup> | 8                                      | <sup>2</sup> <sub>6</sub>              |
| <sup>7</sup> <sub>8</sub>              | <sup>7</sup> <sub>8</sub>              | <sup>1</sup> <sub>4</sub> <sup>5</sup>              | <sup>2</sup> <sub>6</sub> | <sup>3</sup> <sub>5</sub>              | 9   | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sup>6</sup> | <sup>2</sup> <sub>6</sub> <sup>1</sup> | <sup>5</sup> <sub>9</sub>              |
| <sup>2</sup> <sub>7</sub>              | 1                                      | <sup>2</sup> <sub>5</sub>                           | 9                         | 8                                      | 3   | 6   | <sup>5</sup> <sub>7</sub>              | 4                                      |
| 3                                      | <sup>7</sup> <sub>9</sub>              | <sup>4</sup> <sub>6</sub>                           | 5                         | 2                                      | <sup>4</sup> <sub>6</sub>                           | <sup>7</sup> <sub>8</sub>                           | 1                                      | <sup>7</sup> <sub>8</sub> <sup>9</sup> |
| <sup>4</sup> <sub>8</sub> <sup>9</sup> | <sup>5</sup> <sub>8</sub> <sup>9</sup> | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>9</sup> | <sup>4</sup> <sub>6</sub> | 1                                      | 7   | 2   | <sup>5</sup> <sub>9</sub>              | 3                                      |

|                  |                |                  |                |                |                |                  |                  |                  |
|------------------|----------------|------------------|----------------|----------------|----------------|------------------|------------------|------------------|
| 7                | <sup>1 2</sup> | <sup>1 2</sup>   | 9              | <sup>5 3</sup> | <sup>5 3</sup> | 4                | 8                | 6                |
| 3                | <sup>4 8</sup> | <sup>4 8</sup>   | 6              | 2              | 1              | <sup>5 9</sup>   | <sup>5 9</sup>   | <sup>7 9</sup>   |
| <sup>5 6</sup>   | 9              | <sup>5 6</sup>   | 8              | 7              | 4              | 1                | 2                | 3                |
| <sup>8 9</sup>   | <sup>4 7</sup> | <sup>4 8 9</sup> | 3              | 1              | 2              | 6                | <sup>4 7</sup>   | 5                |
| 2                | <sup>1 3</sup> | <sup>5 6</sup>   | <sup>4 7</sup> | 8              | <sup>5 6</sup> | <sup>3 9</sup>   | <sup>1 4</sup>   | <sup>3 4 9</sup> |
| <sup>5 6</sup>   | <sup>1 4</sup> | <sup>1 4</sup>   | <sup>4 7</sup> | <sup>5 6</sup> | 9              | <sup>2 8</sup>   | <sup>1 4</sup>   | <sup>3 7 8</sup> |
| <sup>4 8 9</sup> | 5              | 3                | 2              | <sup>6 9</sup> | 7              | <sup>8 9</sup>   | <sup>4 6</sup>   | 1                |
| <sup>4 9</sup>   | 6              | 7                | 1              | <sup>3 9</sup> | 8              | <sup>2 3 5</sup> | <sup>3 4 5</sup> | <sup>2 4</sup>   |
| 1                | <sup>2 8</sup> | <sup>2 8 9</sup> | 5              | 4              | <sup>3 6</sup> | 7                | <sup>3 6</sup>   | <sup>8 9</sup>   |

|  |   |   |  |  |  |                           |   |  |
|--|---|---|--|--|--|---------------------------|---|--|
| 6  | <sup>4</sup> <sub>7</sub>   | <sup>4</sup> <sub>7</sub> <sup>9</sup>  | 1  | <sup>4</sup> <sub>5</sub> <sup>3</sup> <sup>9</sup>  | <sup>4</sup> <sub>5</sub> <sup>3</sup> <sup>9</sup>  | 2                         | 8   | <sup>5</sup> <sub>3</sub>              |
| <sup>2</sup> <sub>4</sub> <sup>8</sup>             | 5   | 3   | <sup>2</sup> <sub>6</sub> <sup>4</sup> <sup>6</sup> <sup>8</sup>                           | <sup>2</sup> <sub>6</sub> <sup>4</sup> <sup>6</sup> <sup>8</sup>                           | <sup>2</sup> <sub>6</sub> <sup>4</sup> <sup>6</sup> <sup>8</sup>                           | 1                         | 9   | 7                                      |
| <sup>2</sup> <sub>8</sub> <sup>9</sup>             | <sup>1</sup> <sub>2</sub> <sup>8</sup>  | 1   | <sup>7</sup> <sub>8</sub> <sup>9</sup>   | <sup>3</sup> <sub>5</sub> <sup>8</sup> <sup>9</sup>  | <sup>2</sup> <sub>3</sub> <sup>5</sup> <sup>8</sup> <sup>9</sup>                           | 6                         | 4   | <sup>5</sup> <sub>3</sub>              |
| <sup>4</sup> <sub>5</sub> <sup>7</sup>             | <sup>3</sup> <sub>1</sub> <sup>3</sup> <sup>4</sup> <sup>5</sup> <sup>7</sup> | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sup>6</sup>                           | 8  | <sup>1</sup> <sub>5</sub> <sup>3</sup> <sup>9</sup>  | <sup>2</sup> <sub>3</sub> <sup>1</sup> <sup>3</sup> <sup>5</sup> <sup>6</sup> <sup>9</sup> | <sup>4</sup> <sub>9</sub> | 6   | <sup>1</sup> <sub>2</sub> <sup>4</sup> |
| <sup>4</sup> <sub>5</sub> <sup>8</sup>             | 9   | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sup>6</sup> <sup>8</sup>              | <sup>2</sup> <sub>3</sub> <sup>1</sup> <sup>3</sup> <sup>5</sup> <sup>6</sup> <sup>9</sup> | <sup>2</sup> <sub>3</sub> <sup>1</sup> <sup>3</sup> <sup>5</sup> <sup>6</sup> <sup>9</sup> | <sup>2</sup> <sub>3</sub> <sup>1</sup> <sup>3</sup> <sup>5</sup> <sup>6</sup> <sup>9</sup> | 7                         | <sup>5</sup> <sub>3</sub> <sup>1</sup> <sup>2</sup> <sup>4</sup> <sup>8</sup> |  |
| <sup>5</sup> <sub>7</sub> <sup>8</sup>             | <sup>3</sup> <sub>1</sub> <sup>3</sup> <sup>6</sup> <sup>7</sup> <sup>8</sup> | 2   | 4  | <sup>1</sup> <sub>5</sub> <sup>6</sup> <sup>9</sup>  | <sup>3</sup> <sub>5</sub> <sup>6</sup> <sup>9</sup>  | <sup>8</sup> <sub>9</sub> | <sup>5</sup> <sub>3</sub> <sup>1</sup>  | <sup>8</sup>                           |
| <sup>4</sup> <sub>5</sub> <sup>8</sup>             | <sup>2</sup> <sub>4</sub> <sup>6</sup> <sup>8</sup>                           | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup>                           | <sup>5</sup> <sub>6</sub>  | 7  | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sup>6</sup> <sup>8</sup>                           | 3                         | <sup>1</sup> <sub>2</sub>   | 9                                      |
| <sup>4</sup> <sub>7</sub> <sup>8<sup>9</sup></sup> | <sup>3</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>4</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>3</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>                           | <sup>3</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>                           | <sup>3</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>                           | 5                         | <sup>1</sup> <sub>7</sub>   | <sup>4</sup> <sub>6</sub> <sup>8</sup> |
| 1  | <sup>2</sup> <sub>4</sub> <sup>6</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup> | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup> | <sup>5</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>                           | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>4</sup> <sub>8</sub> | <sup>2</sup> <sub>7</sub>   | <sup>4</sup> <sub>6</sub> <sup>8</sup> |

|   |     |           |   |         |               |   |       |   |
|---|-----|-----------|---|---------|---------------|---|-------|---|
|   |     | 6 4 6     | 9 | 4 6     | 3             | 1 | 5     | 2 |
| 2 |     | 3 1 4 5 6 |   | 5 8     | 1 4 5 6 4 8 6 | 7 | 4 6   | 3 |
|   | 3 1 | 6 4 5 6   | 2 | 1 4 5 6 | 2             |   | 3 4 6 | 8 |
|   | 6   | 5 9       |   | 3       | 1             | 8 | 2     | 4 |
| 1 |     | 2 2       | 4 | 5       |               | 6 | 3     | 5 |
|   | 6   | 4 3       |   | 2 5 8   | 5 6 8 9       |   | 1 7   |   |
| 4 | 1 2 | 1 2       | 6 | 7       | 9             |   | 8     | 5 |
| 5 |     | 6 6       |   | 3 4     | 3 4           | 2 | 9     | 1 |
|   | 3   | 3         | 8 | 1       | 2 5           | 4 | 7     | 6 |

|     |   |     |   |   |     |     |   |   |
|-----|---|-----|---|---|-----|-----|---|---|
| 1   | 6 | 7   |   | 5 | 2   | 4   | 2 | 3 |
|     | 2 | 4   | 1 |   | 3   |     | 5 |   |
|     |   |     | 4 |   | 2 3 | 2 3 | 7 | 1 |
| 4   | 5 | 3   |   | 1 |     | 6   |   | 2 |
| 7   |   | 2   | 5 |   | 3   |     |   |   |
|     |   | 6   | 2 |   | 3   |     |   |   |
|     |   |     |   |   |     |     |   |   |
| 2 3 |   | 1   |   | 8 | 1 2 |     | 5 |   |
| 6   |   | 3 1 |   | 4 | 1 5 | 2   |   |   |
|     |   |     |   |   |     |     |   |   |

|   |   |   |   |     |       |     |   |     |       |     |
|---|---|---|---|-----|-------|-----|---|-----|-------|-----|
| 6 | 5 | 9 |   | 2   | 2     | 2   | 1 | 3   | 1 2   | 8   |
|   |   |   | 3 | 4 5 |       |     | 4 | 6   | 4 5 6 | 5 6 |
| 4 | 5 | 1 |   | 6   | 5     |     |   | 3   | 2 3   | 5   |
|   | 9 | 8 |   | 6   | 5     |     | 1 | 1 2 |       | 4   |
|   | 2 |   |   | 1   | 4 5   | 4 5 | 1 | 6   | 3     | 1   |
|   | 7 |   |   | 1 2 | 1 2 3 | 2 3 | 5 | 1 2 | 1 2   | 6   |
|   | 1 |   |   | 5   | 4     | 4 6 | 4 | 6   | 7     | 3   |
| 8 | 4 | 6 |   | 1 2 | 6     | 9   | 4 | 6   | 4 5 6 | 1 3 |
|   |   |   |   | 1   | 1 3   | 3   | 2 | 1 3 | 5 6   |     |

|  |  |   |   |  |   |     |     |   |   |
|--|--|---|---|--|---|-----|-----|---|---|
|  |  | 2 | 2 |  | 3 | 5 6 | 5 6 | 7 | 1 |
|  |  |   |   |  |   |     |     |   |   |
|  |  |   |   |  |   |     |     |   |   |
|  |  |   |   |  |   |     |     |   |   |
|  |  |   |   |  |   |     |     |   |   |
|  |  |   |   |  |   |     |     |   |   |
|  |  |   |   |  |   |     |     |   |   |
|  |  |   |   |  |   |     |     |   |   |
|  |  |   |   |  |   |     |     |   |   |
|  |  |   |   |  |   |     |     |   |   |

|       |       |       |   |  |     |   |     |   |   |
|-------|-------|-------|---|--|-----|---|-----|---|---|
| 4 5 6 | 4 5 6 | 3 5 6 | 2 |  | 5 6 | 2 | 2 3 | 9 | 1 |
| 1     | 7     |       | 3 |  |     |   |     |   |   |
| 8     | 2     |       |   |  |     |   |     |   |   |
|       |       |       | 1 |  | 5   |   |     |   |   |
| 3     |       |       |   |  |     |   |     |   |   |
|       |       |       | 9 |  | 3   |   |     |   |   |
|       |       |       | 1 |  | 6   |   |     | 5 |   |
|       |       |       | 4 |  | 2   |   |     |   |   |
| 7     |       |       |   |  |     |   |     |   |   |

|   |   |   |   |     |     |   |     |   |     |
|---|---|---|---|-----|-----|---|-----|---|-----|
| 4 | 8 | 7 | 3 | 1 2 | 1 2 |   | 5 6 | 9 | 5 6 |
|   |   |   | 6 |     |     |   |     | 2 | 7   |
| 1 | 2 | 6 |   | 9   |     |   |     | 3 | 8   |
| 7 |   | 5 |   |     |     |   |     | 1 | 6   |
|   |   |   | 2 |     |     |   |     | 8 |     |
|   |   |   |   |     |     |   |     |   | 9   |
|   |   |   | 1 |     | 7   | 6 |     | 9 | 2   |
| 3 |   |   |   |     |     |   |     | 4 | 5   |
|   |   |   | 5 |     | 3   |   |     | 1 | 8   |

|                               |                               |                                 |                                   |                                 |                                 |                               |                                 |                                 |
|-------------------------------|-------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|
| 7                             | <sup>1</sup> <sub>6 9</sub>   | 8                               | <sup>1</sup> <sub>3 6</sub>       | 2                               | <sup>1</sup> <sub>4 5 9</sub>   | <sup>3</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>4 5 6</sub>   | <sup>3</sup> <sub>4 5 6</sub>   |
| <sub>4 5 6</sub>              | <sup>2</sup> <sub>6 4 5</sub> | <sup>2</sup> <sub>6 4 5</sub>   | <sup>3</sup> <sub>7 8</sub>       | <sup>4 5 6</sup> <sub>7 8</sub> | <sup>4 5</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>4 5 6</sub> | 9                               | 1                               |
| 3                             | <sup>1 2</sup> <sub>6 9</sub> | <sup>1 2</sup> <sub>4 5 9</sub> | <sup>1</sup> <sub>6 4 5 6 9</sub> | <sup>1</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>4 5 6 9</sub> | <sup>2</sup> <sub>4 5 6</sub> | <sub>7 8</sub>                  | <sub>7 8</sub>                  |
| <sup>1</sup> <sub>5 8 9</sub> | 4                             | 6                               | 2                                 | <sup>1</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>7 8 9</sub>   | <sup>1</sup> <sub>5 9</sub>   | <sup>3</sup> <sub>5 8</sub>     | <sup>3</sup> <sub>5 8 9</sub>   |
| <sup>1</sup> <sub>5 8 9</sub> | <sup>1 2</sup> <sub>8 9</sub> | <sup>1 2</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>8 6</sub>       | 3                               | <sup>1</sup> <sub>4 8 9</sub>   | 7                             | <sup>4 5 6</sup> <sub>8 9</sub> | <sup>4 5 6</sup> <sub>8 9</sub> |
| <sup>1</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>7</sub>       | 5                                 | <sup>1</sup> <sub>4 6 9</sub>   | <sup>1</sup> <sub>4 8 9</sub>   | <sup>1</sup> <sub>4 6 9</sub> | <sup>2</sup> <sub>4 6 8 9</sub> | <sup>2</sup> <sub>4 6 8 9</sub> |
| <sup>1</sup> <sub>4 8</sub>   | 5                             | <sup>1</sup> <sub>4 7</sub>     | 9                                 | <sup>1</sup> <sub>7 8</sub>     | 6                               | <sup>3</sup> <sub>4 7</sub>   | <sup>2 3</sup> <sub>4 7</sub>   | <sup>2 3</sup> <sub>4 7</sub>   |
| <sup>6</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>7 9</sub>     | 4                                 | <sup>5</sup> <sub>7 8</sub>     | 2                               | <sup>5 6</sup> <sub>9</sub>   | 1                               | <sup>5 6</sup> <sub>7 9</sub>   |
| 2                             | <sup>1</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>6 4 9</sub>   | <sup>1</sup> <sub>3 7</sub>       | <sup>1</sup> <sub>5 7</sub>     | <sup>1</sup> <sub>3 5 7</sub>   | 8                             | <sup>4 5 6</sup> <sub>7 9</sub> | <sup>4 5 6</sup> <sub>7 9</sub> |

|                               |                               |                               |                             |                                   |                                 |                             |                                 |                               |
|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------------|---------------------------------|-----------------------------|---------------------------------|-------------------------------|
| 4                             | <sup>8</sup> <sub>6</sub>     | 3                             | 5                           | 9                                 | <sup>7 8</sup> <sub>7</sub>     | <sup>1</sup> <sub>7</sub>   | 2                               | <sup>1</sup> <sub>7 8 6</sub> |
| <sub>5 8 9</sub>              | <sup>2</sup> <sub>5 8 9</sub> | <sup>2</sup> <sub>5 8 9</sub> | <sup>2</sup> <sub>7 8</sub> | 6                                 | 1                               | <sup>4</sup> <sub>7</sub>   | <sup>4 5</sup> <sub>8</sub>     | <sup>4 5</sup> <sub>7 8</sub> |
| 7                             | <sup>2</sup> <sub>5 6 8</sub> | 1                             | <sup>2</sup> <sub>8</sub>   | <sup>3</sup> <sub>4</sub>         | <sup>3</sup> <sub>4</sub>       | 9                           | <sup>5 6</sup> <sub>8</sub>     | <sup>5 6</sup> <sub>8</sub>   |
| <sup>1</sup> <sub>3 4 7</sub> | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>7</sub>     | 8                           | 9                                 | 5                               | <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>2</sub>       | <sup>3</sup> <sub>2</sub>     |
| <sup>1</sup> <sub>5 9</sub>   | <sup>4 5</sup> <sub>7</sub>   | <sup>5</sup> <sub>9</sub>     | 3                           | <sup>1 2</sup> <sub>4 5 7</sub>   | <sup>2</sup> <sub>4 5 7</sub>   | 8                           | <sup>1</sup> <sub>4 6 9 7</sub> | <sup>1</sup> <sub>4 6</sub>   |
| 2                             | <sup>4 5</sup> <sub>7 8</sub> | <sup>3</sup> <sub>5 8 9</sub> | 6                           | <sup>1</sup> <sub>4 5 7</sub>     | <sup>4 5</sup> <sub>7</sub>     | <sup>1</sup> <sub>4 7</sub> | <sup>3</sup> <sub>1 4 9 7</sub> | <sup>3</sup> <sub>1 4</sub>   |
| <sup>3</sup> <sub>5 6 8</sub> | <sup>2 3</sup> <sub>5 8</sub> | <sup>2</sup> <sub>5 8</sub>   | 4                           | <sup>1</sup> <sub>5</sub>         | <sup>3</sup> <sub>5 6 8</sub>   | <sup>1</sup> <sub>3</sub>   | 7                               | 9                             |
| <sup>3</sup> <sub>5 8</sub>   | 9                             | <sup>4</sup> <sub>7</sub>     | <sup>1</sup> <sub>7 8</sub> | <sup>1 2 3</sup> <sub>5 7 8</sub> | <sup>2 3</sup> <sub>5 7 8</sub> | 6                           | <sup>1</sup> <sub>4 5 8</sub>   | <sup>3</sup> <sub>4 5 8</sub> |
| <sup>3</sup> <sub>5 6 8</sub> | 1                             | <sup>4</sup> <sub>7</sub>     | 9                           | <sup>5</sup> <sub>7 8</sub>       | <sup>3</sup> <sub>5 6 7 8</sub> | 2                           | <sup>4 5</sup> <sub>8</sub>     | <sup>4 5</sup> <sub>8</sub>   |

|                                 |                                   |                                   |                             |                               |                                   |                               |                                 |                               |
|---------------------------------|-----------------------------------|-----------------------------------|-----------------------------|-------------------------------|-----------------------------------|-------------------------------|---------------------------------|-------------------------------|
| <sub>4 6</sub>                  | <sup>2</sup> <sub>4 5 6</sub>     | <sup>2</sup> <sub>4 5 6</sub>     | 3                           | 8                             | 9                                 | <sup>2</sup> <sub>4 5</sub>   | 7                               | 1                             |
| 8                               | <sup>2</sup> <sub>7 9</sub>       | <sup>2 3</sup> <sub>5 9</sub>     | 4                           | <sup>5 6</sup> <sub>7</sub>   | 1                                 | <sup>2 3</sup> <sub>5 9</sub> | <sup>2 3</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5 6</sub> |
| 1                               | <sup>4 5</sup> <sub>7 9</sub>     | <sup>4 5</sup> <sub>7 9</sub>     | <sup>2</sup> <sub>6 7</sub> | <sup>5 6</sup> <sub>7</sub>   | <sup>5 6</sup> <sub>7</sub>       | <sup>4 5</sup> <sub>9</sub>   | <sup>5 6</sup> <sub>8 9</sub>   | <sup>4 5 6</sup> <sub>8</sub> |
| 2                               | <sup>4</sup> <sub>7 8 9</sub>     | <sup>4</sup> <sub>7 8 9</sub>     | 5                           | <sup>4</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>4 7 8</sub>     | 6                             | 1                               | <sup>3</sup> <sub>8</sub>     |
| <sup>6</sup> <sub>7 9</sub>     | 3                                 | 1                                 | <sup>2</sup> <sub>8 9</sub> | <sup>6</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>7 8</sub>       | <sup>2</sup> <sub>5 9</sub>   | 4                               | <sup>2</sup> <sub>5 8</sub>   |
| <sub>4 6</sub>                  | <sup>4 5 6</sup> <sub>7 8 9</sub> | <sup>4 5 6</sup> <sub>7 8 9</sub> | <sup>2</sup> <sub>8 9</sub> | 1                             | <sup>2 3</sup> <sub>4 6 7 8</sub> | <sup>2 3</sup> <sub>7 9</sub> | <sup>2 3</sup> <sub>8 9</sub>   | <sup>2 3</sup> <sub>8</sub>   |
| 5                               | <sup>2</sup> <sub>4 7 9</sub>     | <sup>4</sup> <sub>6 7 9</sub>     | 1                           | <sup>4</sup> <sub>6 9</sub>   | <sup>3</sup> <sub>4 6</sub>       | 8                             | <sup>2 3</sup> <sub>6 4 7</sub> | <sup>2 3</sup> <sub>6</sub>   |
| <sup>3</sup> <sub>4 6 7 9</sub> | <sup>4</sup> <sub>6 7 8 9</sub>   | <sup>4</sup> <sub>6 7 8 9</sub>   | <sup>6</sup> <sub>8 9</sub> | 2                             | <sup>4 5 6</sup> <sub>8</sub>     | 1                             | <sup>3</sup> <sub>5 6 7</sub>   | <sup>3</sup> <sub>4 5 6</sub> |
| <sub>4 6</sub>                  | 1                                 | <sup>2</sup> <sub>4 6</sub>       | 7                           | <sup>3</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>4 5 6</sub>     | <sup>2 3</sup> <sub>4 5</sub> | <sup>2 3</sup> <sub>5 6</sub>   | 9                             |

|                               |                               |                                   |                                 |                               |                               |                               |                                   |                                   |
|-------------------------------|-------------------------------|-----------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------------|-----------------------------------|
| <sup>3</sup> <sub>6</sub>     | 5                             | <sup>3</sup> <sub>6 9</sub>       | 1                               | 2                             | 8                             | <sup>3</sup> <sub>9</sub>     | 7                                 | 4                                 |
| 4                             | <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>7 8 9</sub>     | 3                               | <sup>6</sup> <sub>7 9</sub>   | <sup>5 6</sup> <sub>7 9</sub> | <sup>1</sup> <sub>5 8 9</sub> | <sup>2</sup> <sub>5 6</sub>       | <sup>2</sup> <sub>5 6 8 9</sub>   |
| 2                             | <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>7 8 9</sub>     | 4                               | <sup>6</sup> <sub>7 9</sub>   | <sup>5 6</sup> <sub>7 9</sub> | <sup>1</sup> <sub>5 8 9</sub> | <sup>3</sup> <sub>5 6 9</sub>     | <sup>3</sup> <sub>5 6 8 9</sub>   |
| <sup>3</sup> <sub>5 6</sub>   | 1                             | <sup>2 3</sup> <sub>5 6</sub>     | 7                               | <sup>3</sup> <sub>6 9</sub>   | 4                             | <sup>5</sup> <sub>9</sub>     | 8                                 | <sup>2 3</sup> <sub>5 6 9</sub>   |
| 9                             | <sup>2</sup> <sub>7 8</sub>   | <sup>2 3</sup> <sub>5 6 7 8</sub> | <sup>2</sup> <sub>5 6 8</sub>   | <sup>1</sup> <sub>3 8</sub>   | <sup>2</sup> <sub>6</sub>     | 4                             | <sup>2 3</sup> <sub>5 6</sub>     | <sup>1 2 3</sup> <sub>5 6</sub>   |
| <sup>3</sup> <sub>5 6 8</sub> | 4                             | <sup>2 3</sup> <sub>5 6 8 9</sub> | <sup>2</sup> <sub>5 6 8 9</sub> | <sup>1</sup> <sub>3 8 9</sub> | <sup>2</sup> <sub>6 9</sub>   | 7                             | <sup>2 3</sup> <sub>5 6 9</sub>   | <sup>1 2 3</sup> <sub>5 6 9</sub> |
| <sup>5 6</sup> <sub>8</sub>   | 3                             | 4                                 | <sup>2</sup> <sub>8 9</sub>     | <sup>6</sup> <sub>7 8 9</sub> | <sup>2</sup> <sub>6 7 9</sub> | <sup>5</sup> <sub>8 9</sub>   | 1                                 | <sup>5</sup> <sub>8 9</sub>       |
| <sup>1</sup> <sub>7</sub>     | <sup>6</sup> <sub>8 9</sub>   | <sup>5 6</sup> <sub>8 9</sub>     | <sup>6</sup> <sub>8 9</sub>     | 4                             | <sup>1</sup> <sub>3</sub>     | 2                             | <sup>3</sup> <sub>5 9 7 8 9</sub> | <sup>3</sup> <sub>5</sub>         |
| <sup>1</sup> <sub>7</sub>     | <sup>2</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>8 9</sub>       | <sup>5</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>3</sub>     | <sup>3</sup> <sub>6 4 7</sub> | 6                             | <sup>4</sup> <sub>7</sub>         | <sup>3</sup> <sub>7</sub>         |

|                               |                                 |                                 |                               |                                       |                                   |                             |                                 |                               |
|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------------|-----------------------------------|-----------------------------|---------------------------------|-------------------------------|
| <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>4 5 6</sub>   | <sup>3</sup> <sub>5 6</sub>     | <sup>4 5</sup> <sub>7</sub>   | <sup>2</sup> <sub>4 5 6 9</sub>       | 1                                 | <sup>2</sup> <sub>4 5</sub> | <sup>2</sup> <sub>4 7 9</sub>   | 8                             |
| <sup>6</sup> <sub>7 8</sub>   | 9                               | <sup>1</sup> <sub>5 6 7 8</sub> | <sup>4 5</sup> <sub>7 8</sub> | <sup>4 5 6</sup> <sub>8 7 8</sub>     | <sup>4 5 6</sup> <sub>7 8</sub>   | 3                           | <sup>1 2</sup> <sub>4 7</sub>   | <sup>1 2</sup> <sub>5 6</sub> |
| 2                             | <sup>1</sup> <sub>4 5 6 8</sub> | <sup>3</sup> <sub>5 6 7 8</sub> | <sup>4 5</sup> <sub>7 8</sub> | <sup>4 5 6</sup> <sub>8 9 7 8 9</sub> | <sup>4 5 6</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>4 5</sub> | <sup>1</sup> <sub>4 6 7 9</sub> | <sup>1</sup> <sub>5 6 9</sub> |
| 5                             | <sup>3</sup> <sub>6</sub>       | <sup>3</sup> <sub>6</sub>       | <sup>1</sup> <sub>7</sub>     | <sup>1 2</sup> <sub>7</sub>           | <sup>2</sup> <sub>7</sub>         | 9                           | 8                               | 4                             |
| <sub>4 8 9</sub>              | 7                               | <sub>8 9</sub>                  | 6                             | 3                                     | <sub>4 8</sub>                    | <sup>1 2</sup> <sub>5</sub> | <sup>1 2</sup> <sub>5</sub>     | <sup>1 2</sup> <sub>5</sub>   |
| <sub>4 8</sub>                | <sup>1 2</sup> <sub>8</sub>     | <sup>1 2</sup> <sub>8</sub>     | 9                             | <sup>4 5</sup> <sub>8</sub>           | <sup>4 5</sup> <sub>8</sub>       | 7                           | <sup>3</sup> <sub>6</sub>       | <sup>3</sup> <sub>6</sub>     |
| 1                             | <sup>2 3</sup> <sub>8</sub>     | 4                               | <sup>3</sup> <sub>8</sub>     | <sup>6</sup> <sub>8 9</sub>           | <sup>6</sup> <sub>8 9</sub>       | <sup>2</sup> <sub>8</sub>   | 5                               | 7                             |
| <sup>3</sup> <sub>8 9</sub>   | <sup>2 3</sup> <sub>5 8</sub>   | <sup>2 3</sup> <sub>5 8 9</sub> | <sup>1</sup> <sub>4 5 8</sub> | 7                                     | <sup>4 5</sup> <sub>8</sub>       | 6                           | <sup>1 2 3</sup> <sub>4 9</sub> | <sup>1 2 3</sup> <sub>9</sub> |
| <sup>3</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>5 6 8</sub>   | <sup>3</sup> <sub>5 6 8 9</sub> | 2                             | <sup>1</sup> <sub>4 5 6 8</sub>       | <sup>3</sup> <sub>4 5 6 8</sub>   | <sup>1</sup> <sub>4 8</sub> | <sup>1</sup> <sub>3 4 9</sub>   | <sup>3</sup> <sub>9</sub>     |

|                           |                             |                             |                             |                             |                               |                             |                           |                             |
|---------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------|---------------------------|-----------------------------|
| 8                         | 5                           | 4                           | <sup>2</sup> <sub>6</sub>   | 9                           | <sup>2</sup> <sub>6</sub>     | 1                           | 7                         | 3                           |
| <sup>2</sup> <sub>9</sub> | <sup>2</sup> <sub>9</sub>   | 7                           | 3                           | 4                           | 1                             | <sup>5</sup> <sub>8</sub>   | 6                         | <sup>5</sup> <sub>8</sub>   |
| 3                         | 1                           | 6                           | 7                           | 8                           | 5                             | 9                           | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>4</sub>   |
| <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>8</sub>   | 1                           | 9                           | 3                           | 7                             | 4                           | <sup>5</sup> <sub>8</sub> | 6                           |
| <sub>4 6</sub>            | 7                           | <sub>8 9</sub>              | 5                           | 2                           | <sup>4 6</sup> <sub>8 9</sub> | 3                           | 1                         | <sub>8 9</sub>              |
| <sub>4 5 6 9</sub>        | <sup>3</sup> <sub>6 9</sub> | <sup>3</sup> <sub>5 9</sub> | <sup>4 6</sup> <sub>1</sub> | 8                           | 2                             | <sup>5</sup> <sub>9</sub>   | 7                         | <sub>8 9</sub>              |
| 7                         | 4                           | 2                           | 1                           | 6                           | 3                             | <sup>5</sup> <sub>8</sub>   | <sub>8 9</sub>            | <sup>5</sup> <sub>8 9</sub> |
| 1                         | <sup>6</sup> <sub>9</sub>   | <sup>5</sup> <sub>9</sub>   | 8                           | <sup>7</sup> <sub>5 4</sub> | <sup>2</sup> <sub>7</sub>     | <sup>6</sup> <sub>3 4</sub> | <sup>2</sup> <sub>4</sub> | <sub>8 9</sub>              |
| <sub>5 6</sub>            | <sup>3</sup> <sub>8</sub>   | <sup>3</sup> <sub>8</sub>   | <sup>4</sup> <sub>7</sub>   | <sup>5</sup> <sub>9</sub>   | 9                             | <sup>6</sup> <sub>7 4</sub> | <sup>2</sup> <sub>1</sub> | <sub>8 9</sub>              |

|     |     |     |       |     |     |       |     |       |
|-----|-----|-----|-------|-----|-----|-------|-----|-------|
| 1   | 1 2 | 3   | 4     | 1 2 | 2   | 6     | 7   | 2     |
| 8 9 | 9   |     |       | 5   | 5   |       |     | 5 8 9 |
| 5   | 1 2 | 1 2 | 1     | 1 2 | 2   | 3     | 4   | 2     |
|     | 6   | 6   | 8 9   | 7   | 6   | 7     | 6   | 8 9   |
| 7   | 4   | 2   |       | 2 3 | 2 3 | 1     | 1   | 2     |
|     |     | 6   | 8 9   | 5 6 | 5 6 | 8 9   | 8 9 | 5     |
| 6   | 1 2 | 1 2 | 3     | 1 2 | 2   | 2     | 2   | 7     |
|     | 5   | 4 5 |       | 5   | 4 5 | 8 9   | 8 9 |       |
| 1   | 3   | 8   | 7     | 1   | 1 2 | 2     | 3   | 4     |
|     | 9   |     |       | 9   | 5 6 | 5 6   | 9   |       |
| 4   | 3   | 2 3 | 2     | 7   | 2   | 2     | 3   | 1     |
|     | 5   | 4 5 | 9     | 8   | 5 6 | 4 5 6 | 5   | 6     |
|     | 9   |     |       |     | 8   | 8 9   | 6   |       |
| 2   | 1   | 1   | 6     | 3   | 3   | 1     | 5   |       |
|     | 9   | 4   | 7     | 7   |     | 4     | 8 9 | 8 9   |
| 1   | 3   | 1   | 3     | 2   | 5   | 1 2   | 1 2 | 3     |
| 4   |     | 5 6 | 4 5 6 | 5   |     | 4     |     | 6     |
|     | 3   | 3   | 5 6   | 2   | 4   | 7     | 2   | 3     |
| 8 9 | 7   | 5 6 | 8 9   | 5   | 4   | 7 8 9 | 8 9 | 6     |

|   |     |     |     |     |     |       |     |     |
|---|-----|-----|-----|-----|-----|-------|-----|-----|
| 1 | 4   | 5   | 3   | 5   | 6   | 2     | 6   | 2   |
|   | 7   |     | 7 8 | 7 8 |     | 9     | 9   | 9   |
| 3 | 5 6 | 5 6 | 4   | 2   | 5 6 | 1     | 7   | 8   |
|   | 9   | 9   |     |     |     | 4     | 5   | 3   |
| 2 | 8   | 7   | 9   | 1   | 6   | 4     | 5   | 3   |
|   |     | 6   |     | 7   |     |       |     |     |
| 7 | 3   | 2   | 6   | 5   | 1 2 | 8     | 1   | 3   |
|   | 9   | 4   |     |     |     | 9     | 4   | 9   |
| 5 | 3   | 2   | 8   | 9   | 1 2 | 1     | 3   | 1   |
|   | 6   | 4   |     |     | 7   | 6     | 6   | 4   |
|   | 6   | 1   | 8   | 7   | 4   | 3     | 2   | 5   |
|   | 9   |     |     |     |     |       | 6   |     |
|   | 6   | 5 6 | 5 6 | 1   | 6   | 4     | 3   | 2   |
|   | 9   | 7   | 9   | 7 8 |     |       | 8 9 | 7 9 |
| 8 | 2   | 1   | 5   | 3   | 7   | 9     | 4   | 6   |
|   |     |     |     |     | 7   | 9     |     |     |
| 4 | 7   | 6   | 3   | 2   | 7 8 | 7 8 9 | 5   | 1   |
|   |     | 9   |     |     |     |       | 8 9 | 7 9 |

|     |     |       |       |     |       |       |       |     |
|-----|-----|-------|-------|-----|-------|-------|-------|-----|
| 1   | 1   | 1     | 1     | 5   | 3     | 5 6   |       | 2   |
| 5 6 | 4 5 | 4 5 6 | 5     | 8 9 | 7     | 8     |       |     |
| 7   | 2   | 2     | 4     |     | 6     | 5 6   | 1     | 3   |
|     | 5   | 5 6   |       | 8   |       | 9     | 5 6   | 6   |
| 1   | 5 6 | 3     | 2     | 1   | 6     | 5 6   | 5 6   | 9   |
|     |     | 8     | 7 8   | 7   |       | 8     | 4     |     |
| 1   | 3   | 1     | 5     | 2   | 4 5   | 3     | 5     | 3   |
|     | 5   | 7     | 8 9   | 7   | 9     | 8 9   | 4     | 8 9 |
| 8   | 1 2 | 1 2   | 1     | 1   | 6     | 4 5 6 | 7     | 3   |
|     | 4 5 | 4 5   | 5     |     | 9     | 9     | 4 5 6 | 4   |
|     | 9   |       |       |     |       | 7 9   | 6     | 9   |
| 2 3 | 2   | 2     |       |     |       | 3     | 1     | 2   |
| 5   | 4 5 | 4 5   | 5     | 6   | 4 5 6 | 4 5 6 | 4     | 6   |
|     | 9   | 7     | 8 9   | 7 8 | 7 9   | 8     | 8 9   |     |
| 4   | 2   | 3     | 7     | 5   | 1     | 2     | 6     | 6   |
|     | 5   | 8 9   |       | 9   |       | 8     | 8     | 8 9 |
| 1   | 1   | 1     | 6     | 4   | 2     | 4     | 3     | 5   |
|     | 9   | 7 8 9 | 7 8 9 |     | 9     | 8 9   |       |     |
| 2   | 2   | 2     | 3     | 4 5 | 8     | 2     | 1     | 1   |
| 5 6 | 5   | 5 6   | 3     | 4   | 9     | 9     | 7     | 7   |

|       |       |       |       |       |       |       |       |     |
|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| 3     | 6     | 6     | 8     | 4     | 1     | 2     | 5     | 2   |
|       | 9     | 9     |       |       |       | 7     | 7     | 7   |
| 4     | 5     | 4     | 2     | 3     | 3     | 6     | 1     | 9   |
|       | 8     |       | 7     | 7     |       |       |       |     |
| 1     | 1 2   | 1 2   |       | 6     | 5     | 4     | 3     | 8   |
|       | 7     | 7     |       | 9     |       |       |       |     |
| 5     | 1 2 3 | 1 2 3 | 7     | 1 2 3 | 2 3   | 3     | 8     | 4   |
|       | 6     | 6     |       | 4     | 9     | 9     | 6     |     |
|       | 4     | 2 3   |       | 5     | 6     | 5     | 5     | 1   |
|       | 8 9   | 8 9   |       | 9     | 8 9   | 7     | 9     |     |
| 1     | 1     | 3     | 1     | 3     | 1     | 3     | 3     | 2   |
|       | 6     | 6     | 6     | 4 5   | 8     | 4 5   | 7 9   | 4   |
| 7 8 9 | 7 8 9 | 8 9   | 8 9   | 9     | 8 9   | 7 9   | 9     | 6   |
| 2     | 1     | 1     | 3     | 1     | 4 5 6 | 5     | 4 5 6 | 5   |
|       | 6     | 4 5 6 | 8 9   | 8 9   | 7 8   | 7 8 9 | 7     |     |
| 4     | 6     | 3     | 6     | 4 5 6 | 9     | 4 5 6 | 1     | 2 3 |
|       | 8     | 8     | 8     | 8     | 7 8   | 7     | 4 5 6 | 5   |
| 1     | 1     | 3     | 7     | 1     | 1 2   | 2     | 2     | 2 3 |
| 4     | 6     | 6     | 4 5 6 | 4 5 6 | 8     | 4 5 6 | 5     | 5   |

|   |       |       |     |     |       |       |       |       |
|---|-------|-------|-----|-----|-------|-------|-------|-------|
| 4 |       | 1     | 3   | 6   | 2     | 5     | 5     | 5     |
|   | 8 9   |       | 8   |     |       | 7     | 9     | 9     |
| 3 | 6     | 5     | 1   | 4   | 4 5   | 4 5   | 2     | 6     |
|   | 8 9   | 7     | 8   |     | 7 8 9 | 7     | 9     | 4     |
| 2 |       | 2     | 1   | 3   | 3     | 3     | 3     | 1     |
|   | 6     | 5     | 4   | 4 5 | 4 5   | 8     | 6     | 4     |
| 7 |       | 9     |     | 7   | 9     |       |       |       |
| 1 | 5     |       | 2   | 4   | 3     | 3     | 4     | 3     |
|   | 7 8 9 |       | 7 8 | 7   | 6     | 9     | 7 8 9 | 7 8 9 |
| 6 | 4     | 3     | 4   | 3   | 3     | 3     | 1     | 2     |
|   |       | 7 8 9 | 8   | 4 5 | 4 5   | 4 5   | 9     | 7 8 9 |
| 2 | 3     | 2     | 1   | 3   | 1     | 3     | 2 3   | 2     |
|   | 4     |       | 7 8 | 7   | 4 5 6 | 4 5 6 | 7 8   | 7 8   |
| 5 | 2     | 4     | 3   | 7   | 4     | 8     | 1     | 5     |
|   | 9     |       |     |     |       |       | 9     | 6     |
| 8 | 1     | 6     | 5   | 2   | 9     | 7     | 4     | 3     |
|   |       |       |     |     |       |       |       |       |
| 5 | 7     | 4     | 3   | 6   | 1     | 3     | 1     | 3     |
|   |       |       |     | 4   | 4     |       | 5     | 2     |
|   |       |       |     |     |       |       | 8     | 8     |

|   |     |     |     |     |       |   |   |   |
|---|-----|-----|-----|-----|-------|---|---|---|
| 4 | 2   | 1   | 1   |     |       | 5 | 3 | 6 |
|   | 7   |     | 7 8 | 8 9 | 7 8 9 |   |   |   |
|   | 1   | 1   | 1   | 5 6 | 3     | 4 | 2 | 1 |
|   | 6   | 9   | 7   | 9   | 7     |   |   | 7 |
| 3 | 3   | 1   | 1   | 5 6 | 4     | 2 | 9 | 1 |
|   | 8   | 8   | 7   | 7   |       | 5 | 4 | 7 |
| 7 | 4   | 8   | 5   | 1   | 5     | 2 | 2 | 9 |
|   |     |     |     |     |       | 6 | 6 |   |
| 2 | 1   | 1 2 |     | 6   |       | 3 | 5 | 4 |
|   | 9   | 9   | 9   | 7 8 | 7 8   |   |   |   |
| 5 | 6   | 3   | 9   | 4   | 2     | 1 | 7 | 8 |
|   |     |     |     | 4   |       |   |   |   |
| 2 | 5   | 2   | 4   | 7 8 | 6     | 9 | 1 | 3 |
|   | 8   | 7   |     |     |       |   |   |   |
| 1 |     | 4   | 6   | 3   | 5     | 7 | 4 | 2 |
|   | 8 9 |     | 8   | 8 9 |       |   | 6 |   |
| 3 | 3   | 4   | 6   | 2   | 1     | 4 | 6 | 8 |
| 6 | 7   | 9   | 7   | 9   |       |   |   | 5 |

|                           |                           |                            |                             |                                 |                               |                             |                             |                             |
|---------------------------|---------------------------|----------------------------|-----------------------------|---------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>4</sup> <sub>8</sub> | 9                         | <sup>4</sup> <sub>8</sub>  | 6                           | 5                               | 3                             | 7                           | <sup>1 2</sup> <sub></sub>  | <sup>1 2</sup> <sub></sub>  |
| 2                         | 5                         | 1                          | <sup>8 9</sup> <sub>7</sub> | <sup>7 9</sup> <sub>7 8 9</sub> |                               | 4                           | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>6</sub>   |
| 7                         | 3                         | 6                          | 1                           | 4                               | 2                             | <sup>5</sup> <sub>8</sub>   | 9                           | <sup>5</sup> <sub>8</sub>   |
| <sup>5</sup> <sub>9</sub> | 2                         | 7                          | <sup>3</sup> <sub>9</sub>   | 1                               | <sup>5 6</sup> <sub></sub>    | <sup>3</sup> <sub>6 9</sub> | 8                           | 4                           |
| 6                         | 8                         | <sup>4 5</sup> <sub></sub> | 7                           | <sup>3</sup> <sub>9</sub>       | <sup>4 5</sup> <sub></sub>    | 1                           | <sup>2 3</sup> <sub></sub>  | <sup>2 3</sup> <sub>9</sub> |
| <sup>4</sup> <sub>9</sub> | 1                         | 3                          | <sup>2</sup> <sub>8</sub>   | <sup>2</sup> <sub>6</sub>       | <sup>4 6</sup> <sub>8</sub>   | <sup>6</sup> <sub>9</sub>   | 5                           | 7                           |
| 1                         | 4                         | 2                          | 5                           | 8                               | <sup>7</sup> <sub>6</sub>     | <sup>3</sup> <sub>9 7</sub> | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>6 9</sub> |
| 3                         | <sup>7</sup> <sub>6</sub> | <sup>5</sup> <sub>8</sub>  | 4                           | <sup>9 7</sup> <sub>9 7 9</sub> | <sup>6 4</sup> <sub>6 9</sub> | 2                           | <sup>1</sup> <sub>4 7</sub> | <sup>5</sup> <sub>8</sub>   |
| <sup>5</sup> <sub>8</sub> | <sup>6</sup> <sub>7</sub> | 9                          | <sup>2 3</sup> <sub></sub>  | <sup>2 3</sup> <sub></sub>      | <sup>1</sup> <sub>4 7</sub>   | <sup>5</sup> <sub>8</sub>   | <sup>1</sup> <sub>4 6</sub> | <sup>6</sup> <sub></sub>    |

|                           |                             |                            |                             |                             |                               |                           |                               |                             |
|---------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------------|-------------------------------|-----------------------------|
| 9                         | 6                           | 8                          | <sup>4</sup> <sub></sub>    | 7                           | <sup>4</sup> <sub>2</sub>     | 3                         | 5                             | 1                           |
| <sup>5</sup> <sub>7</sub> | 3                           | 4                          | 8                           | 1                           | <sup>5 6</sup> <sub></sub>    | 9                         | 2                             | <sup>6</sup> <sub>7</sub>   |
| <sup>5</sup> <sub>7</sub> | 1                           | 2                          | <sup>5 6</sup> <sub></sub>  | 3                           | 9                             | 4                         | <sup>6</sup> <sub>7</sub>     | 8                           |
| <sup>1</sup> <sub>3</sub> | <sup>2</sup> <sub>8</sub>   | 9                          | <sup>2</sup> <sub>4 7</sub> | <sup>2</sup> <sub>4 8</sub> | <sup>1 2</sup> <sub>4 7</sub> | 6                         | <sup>3</sup> <sub>8</sub>     | 5                           |
| 4                         | 7                           | <sup>5 6</sup> <sub></sub> | 3                           | <sup>8 9</sup> <sub></sub>  | <sup>5 6</sup> <sub></sub>    | <sup>2</sup> <sub>8</sub> | 1                             | <sup>2</sup> <sub>9</sub>   |
| <sup>1</sup> <sub>3</sub> | <sup>2</sup> <sub>8</sub>   | <sup>5 6</sup> <sub></sub> | <sup>5 6</sup> <sub></sub>  | <sup>2</sup> <sub>8 9</sub> | <sup>1 2</sup> <sub></sub>    | 7                         | <sup>3</sup> <sub>8 9</sub>   | 4                           |
| 2                         | <sup>5</sup> <sub>9</sub>   | 1                          | <sup>7</sup> <sub>9</sub>   | 6                           | <sup>3</sup> <sub>8</sub>     | <sup>5</sup> <sub>8</sub> | 4                             | <sup>3</sup> <sub>7 9</sub> |
| 8                         | <sup>4 5</sup> <sub>9</sub> | 3                          | 1                           | <sup>4</sup> <sub>2 7</sub> | <sup>2</sup> <sub>4 7</sub>   | <sup>2</sup> <sub>5</sub> | <sup>6</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>6 9</sub> |
| 6                         | <sup>4</sup> <sub>9</sub>   | 7                          | <sup>4</sup> <sub>9</sub>   | 5                           | <sup>3</sup> <sub>8</sub>     | 1                         | <sup>2 3</sup> <sub>8 9</sub> | <sup>9</sup> <sub></sub>    |

|                                 |                                   |                                     |                                   |                                     |                                 |                               |                                 |                               |
|---------------------------------|-----------------------------------|-------------------------------------|-----------------------------------|-------------------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|
| <sup>2</sup> <sub>4 5 6</sub>   | <sup>3</sup> <sub>4 5 9</sub>     | 1                                   | <sup>2</sup> <sub>4 5 7</sub>     | <sup>2</sup> <sub>5 6 7</sub>       | <sup>2</sup> <sub>4 6 7</sub>   | <sup>3</sup> <sub>4 5 7</sub> | <sup>3</sup> <sub>5 6 9</sub>   | 8                             |
| <sup>4 5 6</sup> <sub>8</sub>   | <sup>3</sup> <sub>4 5 7 8</sub>   | <sup>3</sup> <sub>4 5 6 7 8</sub>   | 9                                 | <sup>5 6</sup> <sub>7 8</sub>       | <sup>4 6</sup> <sub>7 8</sub>   | 2                             | <sup>1</sup> <sub>5 6 7</sub>   | <sup>3</sup> <sub>1 4 7</sub> |
| <sup>2</sup> <sub>4 5 6 8</sub> | <sup>2</sup> <sub>4 5 7 8 9</sub> | <sup>2</sup> <sub>4 5 6 7 8 9</sub> | <sup>1 2</sup> <sub>4 5 7 8</sub> | <sup>2</sup> <sub>5 6 7 8</sub>     | <sup>3</sup> <sub>1 4 5 7</sub> | <sup>1</sup> <sub>4 5 7</sub> | <sup>1</sup> <sub>5 6 4 9</sub> | <sup>9</sup> <sub></sub>      |
| <sup>2</sup> <sub>8</sub>       | <sup>7 8 9</sup> <sub>7 8 9</sub> | <sup>2</sup> <sub>7 8 9</sub>       | <sup>2 3</sup> <sub>7 8</sub>     | 1                                   | 5                               | <sup>3</sup> <sub>8</sub>     | 4                               | 6                             |
| <sup>1 2</sup> <sub>4 5 8</sub> | 6                                 | <sup>2</sup> <sub>4 5 8</sub>       | <sup>2 3</sup> <sub>4</sub>       | <sup>2 3</sup> <sub>8 9</sub>       | <sup>2</sup> <sub>4 8 9</sub>   | 7                             | <sup>1 2 3</sup> <sub>5 9</sub> | <sup>1 2 3</sup> <sub>9</sub> |
| 3                               | <sup>1</sup> <sub>4 5 7 8</sub>   | <sup>2</sup> <sub>4 5 7 8</sub>     | <sup>2</sup> <sub>4 5 7 8</sub>   | <sup>2</sup> <sub>6 4 6 7 8 9</sub> | <sup>2</sup> <sub>5 8 9</sub>   | <sup>1</sup> <sub>5 8</sub>   | <sup>1 2</sup> <sub>9</sub>     | <sup>1 2</sup> <sub>9</sub>   |
| <sup>1</sup> <sub>6</sub>       | <sup>1</sup> <sub>3</sub>         | <sup>3</sup> <sub>6</sub>           | <sup>2</sup> <sub>7</sub>         | 4                                   | <sup>2</sup> <sub>7</sub>       | 9                             | 8                               | 5                             |
| 7                               | 2                                 | <sup>5</sup> <sub>8</sub>           | 6                                 | <sup>5</sup> <sub>8 9</sub>         | <sup>8 9</sup> <sub></sub>      | <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>1 4</sub>     | <sup>3</sup> <sub>1 4</sub>   |
| 9                               | <sup>4 5</sup> <sub>8</sub>       | <sup>4 5</sup> <sub>8</sub>         | <sup>1</sup> <sub>5 8</sub>       | <sup>3</sup> <sub>5 8</sub>         | <sup>1</sup> <sub>8</sub>       | 6                             | <sup>2</sup> <sub>7</sub>       | <sup>2</sup> <sub>7</sub>     |

|                                   |                               |                                 |                               |                               |                                 |                                 |                               |                                 |
|-----------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|
| 7                                 | <sup>1</sup> <sub>5 8 9</sub> | <sup>5 6</sup> <sub></sub>      | <sup>1 2</sup> <sub>6 9</sub> | <sup>1</sup> <sub>5 6 9</sub> | <sup>2 3</sup> <sub>5 6 9</sub> | 4                               | <sup>1 2</sup> <sub>5</sub>   | <sup>1 2 3</sup> <sub></sub>    |
| <sup>1</sup> <sub>4 5 6 9</sub>   | 2                             | <sup>4 5 6</sup> <sub></sub>    | <sup>1</sup> <sub>4 6 9</sub> | 7                             | <sup>3</sup> <sub>4 5 6 9</sub> | <sup>1</sup> <sub>5 6</sub>     | 8                             | <sup>1</sup> <sub>3</sub>       |
| <sup>1</sup> <sub>4 5 6 8</sub>   | <sup>1</sup> <sub>4 5</sub>   | 3                               | <sup>1 2</sup> <sub>4 6</sub> | <sup>1</sup> <sub>5 6</sub>   | 8                               | <sup>1 2</sup> <sub>5 6 7</sub> | <sup>1 2</sup> <sub>5 7</sub> | 9                               |
| <sup>2</sup> <sub>4 8 9</sub>     | <sup>4</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>7 8</sub>     | 5                             | <sup>1</sup> <sub>8 9</sub>   | <sup>6 4</sup> <sub>6 9</sub>   | 3                               | <sup>1 2</sup> <sub>4 7</sub> | <sup>1 2</sup> <sub>4 7 8</sub> |
| <sup>4 5</sup> <sub>8</sub>       | 6                             | <sup>4 5</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>4</sub>     | 2                             | <sup>3</sup> <sub>4</sub>       | <sup>1</sup> <sub>5 7 8</sub>   | 9                             | <sup>1</sup> <sub>4 7 8</sub>   |
| <sup>2 3</sup> <sub>4 5 8 9</sub> | <sup>4 5</sup> <sub>8 9</sub> | 1                               | <sup>4</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>8 9</sub>   | 7                               | <sup>2</sup> <sub>5 8</sub>     | <sup>2</sup> <sub>4 5</sub>   | 6                               |
| <sup>1 2</sup> <sub>5 6 8</sub>   | <sup>1</sup> <sub>5 7 8</sub> | <sup>2</sup> <sub>5 6 7 8</sub> | 3                             | <sup>5 6</sup> <sub>8</sub>   | <sup>2</sup> <sub>5 6</sub>     | 9                               | <sup>1 2</sup> <sub>4 7</sub> | <sup>1 2</sup> <sub>4 7 8</sub> |
| <sup>1 2</sup> <sub>5 8</sub>     | 3                             | <sup>2</sup> <sub>7 8</sub>     | <sup>2</sup> <sub>7 8 9</sub> | 4                             | <sup>5</sup> <sub>9</sub>       | <sup>1 2</sup> <sub>7 8</sub>   | 6                             | <sup>1 2</sup> <sub>7 8</sub>   |
| <sup>4</sup> <sub>6 7 8</sub>     | <sup>6</sup> <sub>7 8</sub>   | 9                               | <sup>2</sup> <sub>7 8</sub>   | <sup>6</sup> <sub>8</sub>     | 1                               | <sup>2</sup> <sub>7 8</sub>     | 3                             | 5                               |

|                               |                             |                             |                           |                            |                            |                             |                             |                             |
|-------------------------------|-----------------------------|-----------------------------|---------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 7                             | <sup>1 2</sup> <sub></sub>  | <sup>1 2</sup> <sub></sub>  | 9                         | <sup>5</sup> <sub>3</sub>  | <sup>5</sup> <sub>3</sub>  | 4                           | 8                           | 6                           |
| 3                             | <sup>4</sup> <sub>8</sub>   | <sup>4</sup> <sub>8</sub>   | 6                         | 2                          | 1                          | <sup>5</sup> <sub>9 7</sub> | <sup>5</sup> <sub>9 7</sub> | <sup>9</sup> <sub></sub>    |
| <sup>5 6</sup> <sub></sub>    | 9                           | <sup>5 6</sup> <sub></sub>  | 8                         | 7                          | 4                          | 1                           | 2                           | 3                           |
| <sup>8 9</sup> <sub>7 8</sub> | <sup>4</sup> <sub>7 8</sub> | <sup>4</sup> <sub>8 9</sub> | 3                         | 1                          | 2                          | 6                           | <sup>4</sup> <sub>7</sub>   | 5                           |
| 2                             | <sup>1</sup> <sub>4 7</sub> | <sup>3</sup> <sub>5 6</sub> | <sup>4</sup> <sub>7</sub> | 8                          | <sup>5 6</sup> <sub></sub> | <sup>3</sup> <sub>9 7</sub> | <sup>1</sup> <sub>4 9</sub> | <sup>3</sup> <sub>4 9</sub> |
| <sup>5 6</sup> <sub>4 7</sub> | <sup>1</sup> <sub>4 7</sub> | <sup>3</sup> <sub>4</sub>   | <sup>4</sup> <sub>7</sub> | <sup>5 6</sup> <sub></sub> | 9                          | <sup>2</sup> <sub>8</sub>   | <sup>1</sup> <sub>4 7</sub> | <sup>2</sup> <sub>8</sub>   |
| <sup>4</sup> <sub>8</sub>     | 6                           | 3                           | 2                         | 9                          | 7                          | <sup>5</sup> <sub>8</sub>   | <sup>4 5</sup> <sub></sub>  | 1                           |
| <sup>4</sup> <sub>9</sub>     | 5                           | 7                           | 1                         | <sup>3</sup> <sub>6</sub>  | 8                          | <sup>2 3</sup> <sub>9</sub> | <sup>4</sup> <sub>6 9</sub> | <sup>2</sup> <sub>4 9</sub> |
| 1                             | <sup>2</sup> <sub>8</sub>   | <sup>2</sup> <sub>8 9</sub> | 5                         | 4                          | <sup>3</sup> <sub>6</sub>  | 7                           | <sup>3</sup> <sub>6</sub>   | <sup>8 9</sup> <sub></sub>  |

|                           |                             |                               |                                   |                               |                                 |                                 |                                 |                               |
|---------------------------|-----------------------------|-------------------------------|-----------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|
| 8                         | 2                           | 7                             | <sup>5 6</sup> <sub>9</sub>       | <sup>5 6</sup> <sub></sub>    | <sup>5 6</sup> <sub>9</sub>     | 4                               | 1                               | 3                             |
| 9                         | <sup>5 6</sup> <sub>4</sub> | <sup>1</sup> <sub>4 7 8</sub> | 3                                 | <sup>1</sup> <sub>4 8</sub>   | <sup>1</sup> <sub>4</sub>       | <sup>2</sup> <sub>5 6 7 8</sub> | <sup>2</sup> <sub>5 7 8</sub>   | <sup>5</sup> <sub>7 8</sub>   |
| 3                         | <sup>5 6</sup> <sub>4</sub> | <sup>1</sup> <sub>4 7 8</sub> | 2                                 | <sup>1</sup> <sub>4 8</sub>   | <sup>1</sup> <sub>4</sub>       | <sup>5 6</sup> <sub>9</sub>     | <sup>5</sup> <sub>8 9</sub>     | <sup>5</sup> <sub>7 8 9</sub> |
| 2                         | 4                           | 8                             | <sup>1</sup> <sub>5 6 9</sub>     | <sup>1</sup> <sub>5 6</sub>   | 7                               | <sup>1</sup> <sub>5 9</sub>     | <sup>3</sup> <sub>5 9</sub>     | <sup>1</sup> <sub>5 9</sub>   |
| 7                         | <sup>3</sup> <sub>9</sub>   | <sup>3</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>4 5 8 9</sub>   | <sup>1</sup> <sub>4 5 8</sub> | <sup>1</sup> <sub>4 5 8 9</sub> | <sup>1</sup> <sub>5 9</sub>     | 6                               | 2                             |
| 6                         | 1                           | <sup>5</sup> <sub>9</sub>     | <sup>3</sup> <sub>9</sub>         | <sup>5</sup> <sub>9</sub>     | <sup>3</sup> <sub>9</sub>       | 2                               | 7                               | <sup>4</sup> <sub>8</sub>     |
| 5                         | <sup>3</sup> <sub>8 9</sub> | <sup>3</sup> <sub>9</sub>     | 2                                 | <sup>1</sup> <sub>4 7 8</sub> | <sup>1</sup> <sub>4 8</sub>     | <sup>1</sup> <sub>4 7</sub>     | <sup>3</sup> <sub>4</sub>       | 6                             |
| <sup>1</sup> <sub>4</sub> | 7                           | <sup>2</sup> <sub>6</sub>     | <sup>1</sup> <sub>4 5 6</sub>     | <sup>1</sup> <sub>4 5 6</sub> | <sup>1</sup> <sub>4 5 6</sub>   | 8                               | <sup>2 3</sup> <sub>4 5 9</sub> | <sup>1</sup> <sub>4 5 9</sub> |
| <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub>   | <sup>2</sup> <sub>6</sub>     | <sup>1</sup> <sub>4 5 6 7 8</sub> | 9                             | <sup>1</sup> <sub>4 5 6 8</sub> | <sup>1 2 3</sup> <sub>5 7</sub> | <sup>2 3</sup> <sub>4 5 7</sub> | <sup>1</sup> <sub>4 5 7</sub> |



|                             |                             |                             |                               |                                   |                               |                               |                               |
|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------|-------------------------------|
| <sup>4</sup> <sub>8</sub>   | <sup>4</sup> <sub>8</sub> 9 | <sup>4</sup> <sub>8</sub> 6 | 5                             | 3                                 | 7                             | <sup>1 2</sup> <sub>1 2</sub> | <sup>1 2</sup> <sub>1 2</sub> |
| 2                           | 5                           | 1                           | <sup>8 9</sup> <sub>7 9</sub> | <sup>7 8 9</sup> <sub>7 8 9</sub> | 4                             | <sup>3</sup> <sub>6</sub>     | <sup>3</sup> <sub>6</sub>     |
| 7                           | 3                           | 6                           | 1                             | 4                                 | 2                             | <sup>5</sup> <sub>8</sub>     | <sup>5</sup> <sub>8</sub>     |
| 9                           | 2                           | 7                           | <sup>3</sup> <sub>8</sub>     | <sup>1</sup> <sub>8</sub>         | <sup>3</sup> <sub>6</sub>     | 5                             | 4                             |
| 6                           | 8                           | <sup>4 5</sup> <sub>9</sub> | 7                             | <sup>3</sup> <sub>4 5</sub>       | 1                             | <sup>2 3</sup> <sub>2 3</sub> | <sup>2 3</sup> <sub>9</sub>   |
| <sup>4 5</sup> <sub>9</sub> | 1                           | 3                           | <sup>2</sup> <sub>9</sub>     | <sup>2</sup> <sub>6</sub>         | <sup>4 5 6</sup> <sub>9</sub> | <sup>6</sup> <sub>9</sub>     | 8 7                           |
| 1                           | 4                           | 2                           | 5                             | 8                                 | <sup>7</sup> <sub>6</sub>     | <sup>3</sup> <sub>9</sub>     | <sup>3</sup> <sub>6</sub>     |
| 3                           | <sup>7</sup> <sub>6</sub>   | <sup>5</sup> <sub>8</sub>   | <sup>4</sup> <sub>9</sub>     | <sup>7</sup> <sub>6</sub>         | <sup>4</sup> <sub>7</sub>     | <sup>6</sup> <sub>5</sub>     | <sup>8</sup> <sub>9</sub>     |
| <sup>5</sup> <sub>8</sub>   | <sup>6</sup> <sub>7</sub>   | 9                           | <sup>2 3</sup> <sub>2 3</sub> | <sup>1</sup> <sub>4</sub>         | <sup>6</sup> <sub>7</sub>     | <sup>1</sup> <sub>4</sub>     | <sup>6</sup> <sub>7</sub>     |

|                             |                               |                               |                               |                               |                                 |                               |                               |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|
| <sup>1</sup> <sub>4</sub>   | <sup>1 2</sup> <sub>6 4</sub> | <sup>4</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>7</sub>     | <sup>2</sup> <sub>6</sub>     | <sup>5</sup> <sub>7 8</sub>     | <sup>4</sup> <sub>6</sub>     | <sup>6</sup> <sub>8 9</sub>   |
| <sup>4</sup> <sub>6</sub>   | <sup>5</sup> <sub>9</sub>     | <sup>2</sup> <sub>4</sub>     | <sup>6</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>6</sub>       | <sup>3</sup> <sub>4</sub>     | <sup>6</sup> <sub>8 9</sub>   |
| <sup>3</sup> <sub>6</sub>   | <sup>2 3</sup> <sub>8</sub>   | 7                             | <sup>5 6</sup> <sub>8 9</sub> | <sup>2</sup> <sub>5 6</sub>   | 4                               | <sup>2</sup> <sub>6</sub>     | <sup>1</sup> <sub>8 9</sub>   |
| 2                           | <sup>3</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>5</sub>     | <sup>5</sup> <sub>7</sub>     | <sup>1</sup> <sub>5</sub>       | <sup>4</sup> <sub>7 8 9</sub> | <sup>5 6</sup> <sub>8 9</sub> |
| <sup>4 5</sup> <sub>3</sub> | <sup>6</sup> <sub>4</sub>     | <sup>3</sup> <sub>8</sub>     | <sup>1 2</sup> <sub>4 5</sub> | <sup>9</sup> <sub>7 8</sub>   | <sup>1 2 3</sup> <sub>1 3</sub> | <sup>1</sup> <sub>5</sub>     | <sup>3</sup> <sub>8</sub>     |
| <sup>4 5</sup> <sub>3</sub> | <sup>3</sup> <sub>7 8</sub>   | 1                             | <sup>4 5</sup> <sub>6</sub>   | <sup>3</sup> <sub>7</sub>     | <sup>6</sup> <sub>7 8 9</sub>   | <sup>2</sup> <sub>7 8 9</sub> | 2                             |
| 8                           | <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>4</sub>     | <sup>3</sup> <sub>6</sub>     | <sup>7</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>5</sub>       | <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>6</sub>     |
| 7                           | 9                             | <sup>2 3</sup> <sub>4</sub>   | <sup>1 2</sup> <sub>6</sub>   | <sup>8</sup> <sub>1 2 3</sub> | <sup>1</sup> <sub>6</sub>       | <sup>5</sup> <sub>4</sub>     | <sup>6</sup> <sub>3</sub>     |
| <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>1 2 3</sup> <sub>4</sub> | 5                             | <sup>1</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>6</sub>     | <sup>9</sup> <sub>8</sub>     | <sup>7</sup> <sub>6</sub>     |

|                           |                             |                           |                               |                             |                               |                             |                               |
|---------------------------|-----------------------------|---------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|
| 8                         | 5                           | 7                         | <sup>6</sup> <sub>9</sub>     | <sup>2</sup> <sub>6</sub>   | <sup>2</sup> <sub>6</sub>     | 4                           | 1 3                           |
| 9                         | <sup>2</sup> <sub>6</sub>   | <sup>1</sup> <sub>4</sub> | 3                             | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>8</sub>     | 5                           | <sup>2</sup> <sub>7 8</sub>   |
| 3                         | <sup>2</sup> <sub>6</sub>   | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub>     | 5                           | <sup>1</sup> <sub>8</sub>     | <sup>2</sup> <sub>6</sub>   | <sup>6</sup> <sub>7 8 9</sub> |
| <sup>2</sup> <sub>5</sub> | 4                           | 8                         | <sup>1</sup> <sub>5 6</sub>   | <sup>1 2</sup> <sub>6</sub> | 7                             | 3                           | <sup>1</sup> <sub>6</sub>     |
| 7                         | <sup>3</sup> <sub>9</sub>   | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>6</sub>   | <sup>1</sup> <sub>8</sub>     | <sup>3</sup> <sub>5</sub>   | <sup>2</sup> <sub>6</sub>     |
| <sup>2</sup> <sub>5</sub> | 1                           | <sup>3</sup> <sub>6</sub> | <sup>5 6</sup> <sub>9</sub>   | <sup>2</sup> <sub>6</sub>   | <sup>2 3</sup> <sub>5 6</sub> | 7                           | <sup>4</sup> <sub>8</sub>     |
| 6                         | <sup>3</sup> <sub>8 9</sub> | <sup>3</sup> <sub>9</sub> | 2                             | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>9</sub>   | 5                             |
| <sup>1</sup> <sub>4</sub> | 7                           | 2                         | <sup>1</sup> <sub>4 5 6</sub> | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>6</sub>     | 8                           | <sup>3</sup> <sub>4</sub>     |
| <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>8 9</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub>     | 3                           | <sup>1</sup> <sub>4</sub>     | <sup>1 2</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub>     |

|                               |                             |                               |                               |                               |                             |                             |                             |
|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>5</sup> <sub>8</sub>     | 4                           | <sup>2</sup> <sub>5</sub>     | 7                             | 1                             | <sup>2</sup> <sub>5</sub>   | 9                           | 6 3                         |
| <sup>5</sup> <sub>7</sub>     | <sup>6</sup> <sub>7</sub>   | 3                             | 9                             | <sup>2</sup> <sub>6</sub>     | <sup>2</sup> <sub>4 5</sub> | <sup>1 2</sup> <sub>4</sub> | <sup>1 2</sup> <sub>8</sub> |
| 1                             | 9                           | <sup>2</sup> <sub>6</sub>     | 8                             | <sup>2 3</sup> <sub>6</sub>   | <sup>2 3</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub>   | 7                           |
| <sup>4 5</sup> <sub>7 8</sub> | <sup>6</sup> <sub>7 8</sub> | <sup>5 6</sup> <sub>7 8</sub> | <sup>4 5 6</sup> <sub>7</sub> | <sup>1</sup> <sub>9</sub>     | <sup>1 2</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub>   | <sup>1 2</sup> <sub>6</sub> |
| 2                             | 3                           | <sup>5 6</sup> <sub>7</sub>   | <sup>4 5 6</sup> <sub>8</sub> | <sup>1</sup> <sub>7</sub>     | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>6</sub>   | <sup>1</sup> <sub>9</sub>   |
| <sup>4</sup> <sub>8</sub>     | 1                           | 9                             | <sup>4</sup> <sub>6</sub>     | <sup>2 3</sup> <sub>2 3</sub> | <sup>2 3</sup> <sub>5</sub> | 7                           | <sup>6</sup> <sub>8</sub>   |
| 6                             | <sup>7</sup> <sub>8</sub>   | <sup>1</sup> <sub>7</sub>     | 2                             | 4                             | <sup>7</sup> <sub>9</sub>   | 3                           | <sup>1</sup> <sub>5</sub>   |
| 3                             | 5                           | 4                             | 1                             | <sup>7</sup> <sub>9</sub>     | 8                           | <sup>2</sup> <sub>6</sub>   | <sup>2</sup> <sub>9</sub>   |
| 9                             | 2                           | <sup>1</sup> <sub>7</sub>     | 3                             | 5                             | 6                           | <sup>1</sup> <sub>7</sub>   | 8 4                         |

|                                 |                             |                           |                             |                                 |                                 |                               |                                 |
|---------------------------------|-----------------------------|---------------------------|-----------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|
| 4                               | <sup>3</sup> <sub>8 9</sub> | 2                         | 1                           | 7                               | <sup>5</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>5 6</sub>   | <sup>3</sup> <sub>6</sub>       |
| <sup>1</sup> <sub>9</sub>       | 5                           | <sup>1</sup> <sub>3</sub> | 6                           | <sup>2</sup> <sub>4</sub>       | <sup>2</sup> <sub>9</sub>       | <sup>2 3</sup> <sub>7</sub>   | <sup>3</sup> <sub>8</sub>       |
| 7                               | <sup>8</sup> <sub>9</sub>   | 6                         | 3                           | <sup>2</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>5</sub>       | <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>4</sub>       |
| <sup>1</sup> <sub>8 9</sub>     | 7                           | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>8 9</sub> | 5                               | <sup>1 2 3</sup> <sub>8 9</sub> | <sup>3</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>6</sub>     |
| <sup>5 6</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>9</sub> | <sup>3</sup> <sub>4</sub> | 7                           | <sup>2 3</sup> <sub>8 9</sub>   | <sup>2 3</sup> <sub>6</sub>     | 1                             | <sup>2 3</sup> <sub>4 5</sub>   |
| <sup>5 6</sup> <sub>1 2 3</sub> | <sup>1</sup> <sub>9</sub>   | <sup>1</sup> <sub>3</sub> | 4                           | <sup>1 2 3</sup> <sub>8 9</sub> | <sup>1 2 3</sup> <sub>6</sub>   | <sup>3</sup> <sub>5</sub>     | <sup>2 3</sup> <sub>7 8 9</sub> |
| <sup>1</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>9</sub>   | 6                               | 7                               | <sup>3</sup> <sub>5</sub>     | <sup>1 2 3</sup> <sub>9</sub>   |
| 2                               | <sup>1</sup> <sub>6</sub>   | <sup>5</sup> <sub>9</sub> | <sup>5</sup> <sub>8 9</sub> | <sup>1</sup> <sub>3</sub>       | <sup>1</sup> <sub>3</sub>       | 4                             | <sup>1</sup> <sub>6</sub>       |
| 3                               | <sup>1</sup> <sub>6</sub>   | <sup>5</sup> <sub>9</sub> | <sup>2</sup> <sub>8 9</sub> | <sup>1 2</sup> <sub>4</sub>     | <sup>1 2</sup> <sub>8 9</sub>   | <sup>6</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 9</sub>     |

|                           |                             |                           |                             |                             |                             |                             |                             |
|---------------------------|-----------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 3                         | <sup>4</sup> <sub>7</sub>   | <sup>8</sup> <sub>9</sub> | 1                           | <sup>2</sup> <sub>8</sub>   | <sup>2</sup> <sub>8 9</sub> | 5                           | 6                           |
| <sup>5</sup> <sub>8</sub> | <sup>5 6</sup> <sub>7</sub> | 1                         | <sup>6</sup> <sub>8</sub>   | 4                           | 7                           | 2                           | <sup>4</sup> <sub>7</sub>   |
| <sup>2</sup> <sub>7</sub> | <sup>4</sup> <sub>9</sub>   | <sup>2</sup> <sub>6</sub> | <sup>6</sup> <sub>9</sub>   | 5                           | 3                           | 1                           | <sup>4</sup> <sub>7</sub>   |
| 6                         | 8                           | 4                         | 3                           | <sup>1 2</sup> <sub>7</sub> | <sup>1 2</sup> <sub>7</sub> | 9                           | <sup>5</sup> <sub>7</sub>   |
| <sup>5</sup> <sub>9</sub> | <sup>3</sup> <sub>5</sub>   | <sup>3</sup> <sub>9</sub> | 7                           | <sup>6</sup> <sub>8</sub>   | <sup>6</sup> <sub>8</sub>   | 4                           | <sup>5</sup> <sub>7</sub>   |
| 1                         | 2                           | 7                         | <sup>4 5</sup> <sub>6</sub> | 9                           | <sup>4 5</sup> <sub>6</sub> | 8                           | 3                           |
| 4                         | <sup>3</sup> <sub>6</sub>   | 5                         | <sup>8</sup> <sub>9</sub>   | <sup>3</sup> <sub>6</sub>   | <sup>6</sup> <sub>8 9</sub> | 7                           | 1                           |
| <sup>7</sup> <sub>9</sub> | <sup>1</sup> <sub>6</sub>   | <sup>3</sup> <sub>9</sub> | 2                           | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>   | <sup>4 5</sup> <sub>8</sub> | <sup>4 5</sup> <sub>9</sub> |
| <sup>2</sup> <sub>8</sub> | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>4 5</sub> | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>4 5</sub> | 9                           |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 6                         | <sup>2</sup> <sub>7</sub> | 1                         | <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>9</sub> | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | <sup>4</sup> <sub>7</sub> | 3                         | 8                         |
| <sup>4</sup> <sub>7</sub> | <sup>5</sup> <sub>7</sub> | <sup>3</sup> <sub>4</sub> | 8                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>9</sub> | <sup>1</sup> <sub>6</sub> | 2                         | <sup>1</sup> <sub>7</sub> | <sup>5</sup> <sub>6</sub> |
| 9                         | <sup>2</sup> <sub>7</sub> | 8                         | <sup>1</sup> <sub>7</sub> | <sup>2</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>7</sub> | <sup>4</sup> <sub>6</sub> | <sup>5</sup> <sub>7</sub> |
| <sup>1</sup> <sub>1</sub> | 4                         | 7                         | <sup>1</sup> <sub>1</sub> | <sup>2</sup> <sub>2</sub> | <sup>3</sup> <sub>3</sub> | <sup>1</sup> <sub>9</sub> | 5                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>6</sub> |
| <sup>1</sup> <sub>1</sub> | <sup>3</sup> <sub>5</sub> | <sup>2</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>3</sub> | <sup>2</sup> <sub>4</sub> | <sup>1</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>2</sub> | <sup>2</sup> <sub>6</sub> |
| <sup>1</sup> <sub>1</sub> | <sup>3</sup> <sub>5</sub> | <sup>2</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>3</sub> | <sup>2</sup> <sub>4</sub> | <sup>1</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>2</sub> | <sup>2</sup> <sub>6</sub> |
| <sup>1</sup> <sub>4</sub> | 8                         | <sup>4</sup> <sub>6</sub> | 5                         | <sup>1</sup> <sub>9</sub> | <sup>3</sup> <sub>2</sub> | <sup>4</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> |
| 3                         | <sup>5</sup> <sub>7</sub> | <sup>6</sup> <sub>9</sub> | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>9</sub> | <sup>7</sup> <sub>8</sub> | <sup>9</sup> <sub>7</sub> | <sup>4</sup> <sub>7</sub> | <sup>6</sup> <sub>5</sub> | 1                         |
| <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>7</sub> | <sup>2</sup> <sub>6</sub> | 4                         | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>6</sub> | <sup>3</sup> <sub>7</sub> | <sup>2</sup> <sub>5</sub> | <sup>6</sup> <sub>9</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 9                         | 2                         | <sup>4</sup> <sub>6</sub> | <sup>5</sup> <sub>6</sub> | 7                         | 3                         | 1                         | 8                         | <sup>4</sup> <sub>5</sub> |
| <sup>3</sup> <sub>7</sub> | 5                         | 1                         | 9                         | 4                         | <sup>2</sup> <sub>8</sub> | 6                         | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> |
| <sup>3</sup> <sub>7</sub> | <sup>4</sup> <sub>6</sub> | <sup>5</sup> <sub>6</sub> | 1                         | <sup>2</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> | <sup>4</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> |
| <sup>5</sup> <sub>8</sub> | 3                         | <sup>6</sup> <sub>8</sub> | 2                         | <sup>5</sup> <sub>9</sub> | 7                         | 4                         | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>8</sub> |
| 1                         | <sup>8</sup> <sub>9</sub> | <sup>7</sup> <sub>8</sub> | 4                         | <sup>3</sup> <sub>9</sub> | 6                         | 5                         | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> |
| <sup>5</sup> <sub>7</sub> | <sup>4</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub> | 8                         | <sup>5</sup> <sub>9</sub> | 1                         | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> |
| 2                         | 1                         | <sup>8</sup> <sub>9</sub> | 3                         | 6                         | <sup>4</sup> <sub>5</sub> | <sup>8</sup> <sub>9</sub> | 7                         | <sup>4</sup> <sub>5</sub> |
| 4                         | <sup>7</sup> <sub>8</sub> | 5                         | <sup>1</sup> <sub>7</sub> | <sup>2</sup> <sub>8</sub> | 9                         | <sup>8</sup> <sub>9</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> |
| 6                         | <sup>7</sup> <sub>8</sub> | 3                         | <sup>1</sup> <sub>7</sub> | <sup>2</sup> <sub>8</sub> | <sup>4</sup> <sub>5</sub> | <sup>8</sup> <sub>9</sub> | <sup>4</sup> <sub>5</sub> | <sup>9</sup> <sub>7</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 5                         | <sup>4</sup> <sub>7</sub> | 3                         | <sup>1</sup> <sub>2</sub> | 9                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>6</sub> |
| <sup>6</sup> <sub>8</sub> | <sup>4</sup> <sub>8</sub> | <sup>4</sup> <sub>6</sub> | <sup>2</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>3</sub> | 7                         | <sup>2</sup> <sub>4</sub> | 1                         |
| 2                         | <sup>4</sup> <sub>7</sub> | 1                         | 6                         | <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | <sup>5</sup> <sub>3</sub> | <sup>4</sup> <sub>8</sub> | <sup>5</sup> <sub>3</sub> |
| 4                         | <sup>8</sup> <sub>9</sub> | <sup>8</sup> <sub>9</sub> | <sup>1</sup> <sub>3</sub> | 2                         | 6                         | <sup>1</sup> <sub>3</sub> | 5                         | 7                         |
| 7                         | 1                         | <sup>2</sup> <sub>5</sub> | 8                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>3</sub> |
| <sup>3</sup> <sub>8</sub> | 6                         | <sup>2</sup> <sub>5</sub> | 7                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> |
| <sup>1</sup> <sub>3</sub> | <sup>2</sup> <sub>5</sub> | 7                         | 4                         | <sup>1</sup> <sub>5</sub> | 8                         | 6                         | <sup>1</sup> <sub>2</sub> | 9                         |
| <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>4</sub> | <sup>4</sup> <sub>8</sub> | 9                         | <sup>1</sup> <sub>7</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> |
| 9                         | <sup>2</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>8</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 5                         | <sup>4</sup> <sub>7</sub> | 3                         | <sup>1</sup> <sub>2</sub> | 9                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>6</sub> |
| <sup>6</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | <sup>4</sup> <sub>6</sub> | <sup>2</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>3</sub> | 8                         | <sup>2</sup> <sub>4</sub> | 1                         |
| 2                         | <sup>4</sup> <sub>7</sub> | 1                         | 6                         | <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | <sup>5</sup> <sub>3</sub> | <sup>4</sup> <sub>8</sub> | <sup>5</sup> <sub>3</sub> |
| 4                         | <sup>8</sup> <sub>9</sub> | <sup>8</sup> <sub>9</sub> | <sup>1</sup> <sub>3</sub> | 2                         | 6                         | <sup>1</sup> <sub>3</sub> | 5                         | 8                         |
| <sup>3</sup> <sub>7</sub> | 1                         | <sup>2</sup> <sub>5</sub> | 8                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>3</sub> |
| 8                         | 6                         | <sup>2</sup> <sub>5</sub> | 7                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> |
| <sup>1</sup> <sub>3</sub> | <sup>2</sup> <sub>5</sub> | 8                         | 4                         | <sup>1</sup> <sub>5</sub> | 7                         | 6                         | <sup>1</sup> <sub>2</sub> | 9                         |
| <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>4</sub> | <sup>4</sup> <sub>8</sub> | 9                         | <sup>1</sup> <sub>7</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> |
| 9                         | <sup>2</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>8</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>4</sup> <sub>8</sub> | <sup>6</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>3</sup> <sub>4</sub> | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>7</sub> | <sup>4</sup> <sub>5</sub> | 1                         | 2                         | <sup>3</sup> <sub>4</sub> |
| <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>7</sub> | <sup>1</sup> <sub>4</sub> | 3                         | <sup>1</sup> <sub>4</sub> | 2                         | 6                         | 9                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>7</sub> |
| <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>2</sub> | 8                         | <sup>1</sup> <sub>4</sub> | 9                         | <sup>5</sup> <sub>7</sub> | <sup>3</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>3</sup> <sub>7</sub> |
| <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | 2                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | <sup>7</sup> <sub>8</sub> | 6                         | <sup>7</sup> <sub>8</sub> | <sup>3</sup> <sub>4</sub> |
| 3                         | <sup>2</sup> <sub>6</sub> | 8                         | <sup>1</sup> <sub>4</sub> | <sup>6</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | <sup>4</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>4</sup> <sub>5</sub> |
| 7                         | <sup>2</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> | <sup>6</sup> <sub>9</sub> | <sup>5</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> |
| <sup>2</sup> <sub>8</sub> | 1                         | 5                         | <sup>2</sup> <sub>9</sub> | <sup>3</sup> <sub>8</sub> | 6                         | 4                         | <sup>3</sup> <sub>7</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>6</sub> |
| <sup>2</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>6</sub> | 7                         | <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>8</sub> | <sup>2</sup> <sub>5</sub> | <sup>1</sup> <sub>8</sub> | <sup>5</sup> <sub>9</sub> | 9                         |
| <sup>2</sup> <sub>8</sub> | 4                         | 7                         | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>8</sub> | 6                         |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>4</sup> <sub>8</sub> | <sup>6</sup> <sub>7</sub> | 9                         | <sup>2</sup> <sub>5</sub> | 7                         | <sup>1</sup> <sub>8</sub> | 3                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> |
| <sup>7</sup> <sub>8</sub> | 3                         | 5                         | <sup>2</sup> <sub>9</sub> | 4                         | <sup>1</sup> <sub>8</sub> | 6                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> |
| <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>6</sub> | 1                         | <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>3</sup> <sub>6</sub> | <sup>4</sup> <sub>9</sub> | 8                         | <sup>2</sup> <sub>4</sub> |
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|              |              |              |            |                  |                  |                  |            |              |
|--------------|--------------|--------------|------------|------------------|------------------|------------------|------------|--------------|
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| 4 2<br>9     | 4 5          | 7            | 4 5 6<br>9 | 4 5 6<br>9       | 3                | 1 2<br>5 6       | 1 5<br>6   | 8            |
| 7            | 2 6<br>8     | 1 6<br>8     | 3          | 1 2<br>5 9       | 1 2<br>5 8 9     | 4                | 1 5<br>6 8 | 1 5          |
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|            |            |          |          |            |            |              |                |            |
|------------|------------|----------|----------|------------|------------|--------------|----------------|------------|
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| 1 2<br>8 9 | 6 7        | 6 9      | 1 2<br>6 | 4          | 1 2<br>7 8 | 1 2<br>5 7 8 | 6 3<br>9       | 5 6<br>7 9 |

|            |              |              |            |            |            |              |              |              |
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|              |            |            |              |              |                  |              |                |                  |
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|        |               |             |               |               |            |          |                 |                 |  |
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|-------------------|-----------------|-----------------|-----------------|-----------------|---------------|------------|-------------------|-------------------|--|
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|          |               |               |     |        |          |        |               |          |  |
|----------|---------------|---------------|-----|--------|----------|--------|---------------|----------|--|
| 6        | 4 5           | 8             | 1   | 2      | 3        | 7<br>9 | 4 5<br>7      | 4<br>7 9 |  |
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| 1 2<br>9 | 1<br>4<br>9   | 2<br>6<br>9   | 3   | 7      | 1<br>6 4 | 8      | 5             |          |  |
| 4        | 7             | 6             | 9   | 1<br>8 | 1<br>8   | 5      | 2 3<br>2 3    |          |  |
| 8 9      | 5<br>8 9      | 5<br>9        | 6   | 3      | 2        | 1      | 4<br>7        | 4<br>7   |  |
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| 5 6<br>8 | 1      | 2      | 5             | 3<br>6        | 3<br>5 6      | 7 8         | 3<br>6 4      | 4<br>9        |  |
| 2        | 3<br>9 | 5      | 6             | 1<br>4<br>8 9 | 1<br>3<br>4   | 1<br>3<br>4 | 3<br>8        | 7             |  |
| 1<br>4   | 8      | 7      | 1 2<br>4 5    | 1 2 3<br>4    | 1 2 3<br>4 5  | 9           | 2 3<br>4 6    | 1<br>4 5 6    |  |
| 1<br>4   | 3<br>9 | 6      | 1 2<br>4 5    | 7             | 1 2 3<br>4 5  | 1 2 3<br>5  | 2 3<br>4      | 1<br>4 5<br>8 |  |

|     |     |     |     |     |     |     |   |     |
|-----|-----|-----|-----|-----|-----|-----|---|-----|
| 1   | 7   | 8   | 3   | 2   | 5   | 4 6 | 9 | 4 6 |
| 2 3 | 6   | 2 3 | 4   | 4 9 | 7 9 | 7 9 | 8 | 5 1 |
| 9   | 4 5 | 4 5 | 1   | 8   | 6   | 7   | 2 | 3   |
| 5   | 2 3 | 6   | 4   | 4   | 3   | 1   | 9 | 8 7 |
| 8   | 1   | 2   | 7   | 5 6 | 2   | 3   | 4 | 5 6 |
| 4   | 3   | 7   | 6   | 5 6 | 3   | 5 6 | 1 | 2   |
| 2 3 | 2   | 2 3 | 5   | 3   | 4   | 1   | 6 | 8   |
| 7   | 3   | 6   | 8   | 4 5 | 6   | 1   | 2 | 3   |
| 7   | 3   | 6   | 4 5 | 1   | 2   | 3   | 9 | 7   |

|     |   |     |     |     |     |   |     |     |   |
|-----|---|-----|-----|-----|-----|---|-----|-----|---|
| 1   | 2 | 4 3 | 4 3 | 5 3 | 5 3 | 7 | 5   | 6   | 9 |
| 4 6 | 5 | 4 6 | 4 6 | 9   | 8   | 2 | 1   | 6   | 3 |
| 7 8 | 3 | 6   | 7 8 | 9   | 7   | 8 | 9   | 1   | 4 |
| 4 5 | 6 | 3   | 4 5 | 6   | 1   | 5 | 5 6 | 1   | 5 |
| 7 8 | 2 | 3   | 7 8 | 9   | 7   | 8 | 9   | 4   | 7 |
| 4 5 | 6 | 1   | 8   | 5   | 3   | 4 | 3   | 2 3 | 5 |
| 7   | 5 | 6   | 7   | 8   | 9   | 1 | 2   | 3   | 4 |
| 4   | 8 | 3   | 1   | 4   | 8   | 2 | 3   | 6   | 7 |
| 5   | 3 | 6   | 2   | 5   | 3   | 4 | 1   | 3   | 7 |
| 9   | 1 | 4   | 6   | 4 5 | 6   | 2 | 3   | 1   | 2 |

|     |   |     |     |     |     |   |   |   |
|-----|---|-----|-----|-----|-----|---|---|---|
| 9   | 6 | 4   | 2   | 5   | 3   | 7 | 2 | 1 |
| 5   | 2 | 7   | 4   | 1   | 8 9 | 8 | 6 | 3 |
| 3   | 1 | 3   | 7   | 6   | 2   | 5 | 2 | 4 |
| 8   | 1 | 8   | 7   | 6   | 9   | 5 | 9 | 4 |
| 7   | 9 | 1   | 2   | 3   | 5   | 4 | 6 | 2 |
| 4   | 8 | 2   | 6   | 1   | 7   | 9 | 3 | 5 |
| 2 3 | 5 | 2 3 | 9   | 4   | 8   | 2 | 6 | 1 |
| 4   | 5 | 6   | 9   | 8   | 7   | 1 | 5 | 6 |
| 6   | 7 | 5   | 8   | 2   | 1   | 3 | 4 | 9 |
| 1   | 3 | 9   | 5 6 | 4 5 | 4   | 6 | 2 | 7 |
| 2   | 4 | 2   | 3   | 9   | 7   | 1 | 5 | 6 |

|       |   |   |     |     |   |   |   |     |     |       |
|-------|---|---|-----|-----|---|---|---|-----|-----|-------|
| 8     | 1 | 5 | 4 5 | 6   | 4 | 3 | 2 | 1 2 | 1 2 | 1 2   |
| 7     | 5 | 9 | 7   | 9   | 4 | 9 | 6 | 4 5 | 4 5 | 4 5   |
| 4     | 3 | 2 | 4 5 | 3   | 4 | 4 | 1 | 4 5 | 4 5 | 6     |
| 1     | 3 | 1 | 3   | 3   | 4 | 6 | 5 | 2   | 7   | 1 2 3 |
| 4     | 6 | 9 | 9   | 9   | 8 | 9 | 5 | 6   | 4   | 8 9   |
| 5     | 6 | 1 | 3   | 3   | 7 | 8 | 9 | 9   | 2   | 4     |
| 3     | 3 | 3 | 3   | 2   | 1 | 9 | 4 | 1   | 3   | 1     |
| 9     | 7 | 8 | 9   | 7   | 9 | 9 | 2 | 5   | 6   | 7     |
| 4     | 2 | 3 | 2   | 4   | 1 | 9 | 5 | 1   | 3   | 1     |
| 4     | 7 | 8 | 9   | 4   | 6 | 9 | 8 | 7   | 7   | 8     |
| 7     | 1 | 5 | 5 6 | 4 5 | 4 | 6 | 8 | 3   | 9   | 1 2   |
| 2 3   | 6 | 5 | 5 6 | 9   | 1 | 4 | 6 | 3   | 2   | 4 5   |
| 1 2 3 | 6 | 9 | 9   | 9   | 7 | 7 | 9 | 4 5 | 8   | 7     |
| 1 2 3 | 4 | 8 | 5   | 3   | 2 | 6 | 3 | 1 2 | 1 2 | 1 2   |

|   |   |   |     |   |   |   |     |       |
|---|---|---|-----|---|---|---|-----|-------|
| 4 | 1 | 7 | 5   | 3 | 5 | 2 | 6   | 5     |
| 5 | 3 | 2 | 4 5 | 7 | 2 | 5 | 4   | 1     |
| 8 | 9 | 6 | 4 5 | 8 | 6 | 9 | 9   | 8 9   |
| 5 | 2 | 9 | 4 5 | 2 | 1 | 3 | 3   | 1     |
| 8 | 9 | 8 | 7   | 7 | 7 | 4 | 5   | 8     |
| 9 | 4 | 4 | 1   | 8 | 1 | 6 | 5   | 3     |
| 6 | 7 | 1 | 5   | 4 | 5 | 8 | 2   | 2     |
| 3 | 8 | 5 | 9   | 2 | 2 | 4 | 1   | 7     |
| 7 | 9 | 8 | 6   | 5 | 4 | 1 | 2 3 | 2     |
| 2 | 5 | 4 | 6   | 3 | 1 | 3 | 8   | 4     |
| 1 | 4 | 6 | 3   | 2 | 5 | 8 | 7   | 4 5 6 |

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 7 | 8 | 6 | 4 | 9 | 2 | 3 | 5 | 1 |
| 3 | 4 | 9 | 5 | 7 | 1 | 2 | 6 | 8 |
| 1 | 2 | 5 | 3 | 8 | 6 | 7 | 4 | 9 |
| 4 | 8 | 6 | 3 | 7 | 1 | 8 | 9 | 2 |
| 5 | 1 | 6 | 2 | 4 | 5 | 9 | 1 | 3 |
| 4 | 5 | 1 | 6 | 7 | 2 | 8 | 1 | 3 |
| 6 | 5 | 4 | 8 | 3 | 8 | 1 | 7 | 2 |
| 9 | 3 | 1 | 2 | 5 | 7 | 4 | 5 | 6 |
| 2 | 7 | 8 | 1 | 5 | 4 | 5 | 9 | 3 |

|                          |                          |                     |                        |                          |                   |                       |                         |                                       |
|--------------------------|--------------------------|---------------------|------------------------|--------------------------|-------------------|-----------------------|-------------------------|---------------------------------------|
| 6                        | <sup>1</sup><br>5<br>8 9 | 4 5<br>7 8 9        | 4<br>8 9               | 3                        | <sup>2</sup><br>7 | <sup>1 2</sup><br>4   | <sup>1 2</sup><br>4 5   | <sup>1 2</sup><br>4 5<br><sup>9</sup> |
| 4 5<br>9                 | 2                        | 4 5<br>8 9          | 4<br>8 9               | 6 4<br>8                 | 6                 | 1                     | 4<br>6                  | 3<br>4 5<br>7                         |
| <sup>1</sup><br>4<br>7   | <sup>1</sup><br>9        | 3<br>7              | 3<br>9                 | 4<br>6<br>9              | 5                 | <sup>2</sup><br>7     | 8                       | <sup>1 2 3</sup><br>4                 |
| 3                        | 7                        | 1                   | <sup>5 6</sup><br>8    | <sup>6</sup><br>8        | <sup>5</sup><br>8 | 9                     | <sup>2</sup><br>4       | <sup>2</sup><br>4                     |
| <sup>5</sup><br>9        | <sup>5 6</sup><br>8 9    | <sup>5</sup><br>8 9 | 2                      | <sup>1</sup><br>9        | 4                 | <sup>1 3</sup><br>7   | <sup>1 5</sup><br>7 8   | <sup>1 3</sup><br>5 6                 |
| <sup>2</sup><br>4        | <sup>5 6</sup><br>8 9    | <sup>2</sup><br>4   | 7                      | <sup>1</sup><br>9        | 3                 | <sup>1</sup><br>6     | <sup>1</sup><br>5<br>8  | <sup>1</sup><br>5 6                   |
| 8                        | <sup>1</sup><br>3<br>7   | <sup>2 3</sup><br>7 | 4<br>3                 | <sup>2</sup><br>4<br>7   | 6                 | 5                     | 9                       | <sup>1 2 3</sup><br>4                 |
| <sup>2</sup><br>5<br>7   | <sup>3</sup><br>9        | <sup>2 3</sup><br>7 | 1                      | <sup>2</sup><br>4<br>7 8 | 5                 | <sup>2 3</sup><br>7   | 6                       | <sup>2 3</sup><br>4<br>8              |
| <sup>1 2</sup><br>5<br>7 | 4                        | 6                   | <sup>3</sup><br>5<br>8 | <sup>2</sup><br>7 8      | 5                 | <sup>1 2 3</sup><br>7 | <sup>1 2 3</sup><br>7 8 | <sup>1 2 3</sup><br>8                 |

|                     |                       |                        |                   |                        |                     |                          |                   |                   |
|---------------------|-----------------------|------------------------|-------------------|------------------------|---------------------|--------------------------|-------------------|-------------------|
| 5                   | 8                     | 1                      | 9                 | 3                      | 2                   | 7                        | 4                 | 6                 |
| 4<br>6              | <sup>3</sup><br>7     | <sup>3</sup><br>4<br>6 | 5                 | 4<br>8                 | <sup>6</sup><br>7 8 | 9                        | 2                 | 1                 |
| 9                   | <sup>2</sup><br>7     | <sup>2</sup><br>4<br>6 | <sup>1</sup><br>7 | <sup>1</sup><br>4<br>6 | <sup>6</sup><br>7   | 3                        | <sup>5</sup><br>8 | <sup>5</sup><br>8 |
| 7                   | 6                     | <sup>5</sup><br>9      | 2                 | <sup>1</sup><br>8      | <sup>5</sup><br>8   | <sup>1</sup><br>4        | 3                 | <sup>4</sup><br>9 |
| <sup>1 2</sup><br>8 | 4                     | <sup>5</sup><br>9      | 3                 | <sup>1</sup><br>6      | <sup>5 6</sup><br>7 | 8                        | <sup>1</sup><br>9 | <sup>2</sup><br>7 |
| <sup>1 2</sup><br>8 | <sup>1 2 3</sup><br>8 | <sup>2 3</sup><br>8    | <sup>1</sup><br>7 | 9                      | 4                   | 5                        | 6                 | <sup>2</sup><br>7 |
| <sup>2</sup><br>8   | 9                     | <sup>2</sup><br>8      | 4                 | 5                      | <sup>1</sup><br>6   | 7                        | 3                 |                   |
| 3                   | <sup>1 2</sup><br>7   | <sup>2</sup><br>4<br>6 | 8                 | <sup>2</sup><br>7      | 9                   | <sup>1 2</sup><br>4<br>6 | <sup>1</sup><br>5 | 4 5               |
| <sup>1 2</sup><br>4 | 5                     | <sup>2</sup><br>4<br>7 | 6                 | <sup>2</sup><br>7      | 3                   | <sup>1 2</sup><br>4      | <sup>8</sup><br>9 | <sup>8</sup><br>9 |

|                       |                          |                        |                        |                        |                               |                             |                        |                               |
|-----------------------|--------------------------|------------------------|------------------------|------------------------|-------------------------------|-----------------------------|------------------------|-------------------------------|
| 8                     | <sup>1 2</sup><br>9      | 7                      | 5                      | <sup>1</sup><br>4      | <sup>3</sup><br>6             | <sup>1</sup><br>4           | <sup>2 3</sup><br>9    | <sup>1</sup><br>4             |
| <sup>1 2 3</sup><br>1 | <sup>1 2</sup><br>5      | <sup>2 3</sup><br>5    | <sup>1 2</sup><br>8    | 9                      | <sup>1</sup><br>4<br>7 8      | 6                           | <sup>2</sup><br>4<br>7 | <sup>1</sup><br>4<br>5<br>7 8 |
| 4                     | <sup>1 2</sup><br>5<br>9 | 6                      | <sup>1 2 3</sup><br>8  | <sup>1</sup><br>7 8    | <sup>3</sup><br>7 8           | <sup>1</sup><br>7 8         | <sup>2 3</sup><br>7    | <sup>1</sup><br>5<br>7 8      |
| <sup>1</sup><br>7     | <sup>3</sup><br>6        | <sup>4</sup><br>8      | <sup>1</sup><br>8      | <sup>3</sup><br>5<br>8 | <sup>1</sup><br>5<br>8        | 2                           | <sup>4 5</sup><br>7    | 9                             |
| 5                     | <sup>1 2</sup><br>4      | <sup>2 3</sup><br>4    | 7                      | <sup>1</sup><br>8      | <sup>3</sup><br>6             | <sup>2</sup><br>9           | <sup>1</sup><br>4      | <sup>1</sup><br>6<br>8        |
| <sup>1 2</sup><br>7   | <sup>1 2</sup><br>7 8    | <sup>2</sup><br>8 9    | 4                      | <sup>1</sup><br>5<br>8 | <sup>2</sup><br>9             | 3                           | <sup>5 6</sup><br>7    | <sup>1</sup><br>5<br>6<br>7 8 |
| <sup>7</sup><br>9     | 3                        | <sup>4 5</sup><br>8 9  | <sup>1</sup><br>8 9    | 2                      | <sup>1</sup><br>4<br>5<br>7 8 | <sup>4 5</sup><br>7         | <sup>4 5 6</sup><br>9  | <sup>4 5 6</sup><br>7         |
| <sup>2</sup><br>7     | <sup>6 4</sup><br>9      | <sup>5</sup><br>7      | 1                      | <sup>3</sup><br>6<br>9 | <sup>4 5</sup><br>7           | <sup>3</sup><br>4<br>5<br>7 | <sup>4 5</sup><br>7    | <sup>2 3</sup><br>8           |
| <sup>2</sup><br>7     | <sup>6 4</sup><br>9      | <sup>2</sup><br>4<br>5 | <sup>3</sup><br>6<br>9 | <sup>4 5</sup><br>7    | <sup>3</sup><br>4<br>5<br>7   | <sup>4 5</sup><br>7         | <sup>1</sup><br>2<br>3 |                               |

|                     |                        |                   |                          |                       |                          |                        |                                 |                                  |
|---------------------|------------------------|-------------------|--------------------------|-----------------------|--------------------------|------------------------|---------------------------------|----------------------------------|
| 5                   | <sup>1 2 3</sup><br>9  | <sup>1</sup><br>4 | <sup>3</sup><br>6        | 7                     | <sup>1</sup><br>8        | <sup>1 2</sup><br>4    | <sup>1 2</sup><br>8             | <sup>1 2</sup><br>6              |
| <sup>1 2</sup><br>1 | <sup>1 2</sup><br>5    | <sup>1</sup><br>4 | <sup>6</sup><br>9        | 3                     | <sup>2</sup><br>6<br>8 9 | <sup>1 2</sup><br>4    | <sup>1 2</sup><br>5<br>6<br>8 9 | <sup>2</sup><br>4<br>5<br>6<br>8 |
| <sup>1 2</sup><br>4 | <sup>1 2</sup><br>4    | 8                 | <sup>2</sup><br>6<br>9   | <sup>1</sup><br>4     | <sup>6</sup><br>9        | 5                      | <sup>1 2</sup><br>6             | <sup>1</sup><br>6                |
| 6                   | <sup>2 3</sup><br>7    | <sup>5</sup><br>8 | <sup>3</sup><br>6        | 1                     | <sup>5</sup><br>7        | 9                      | 4                               | <sup>2 3</sup><br>5<br>8         |
| <sup>1</sup><br>7   | <sup>3</sup><br>8      | <sup>1</sup><br>4 | <sup>5 6</sup><br>7      | <sup>2</sup><br>4     | <sup>3</sup><br>7        | <sup>5 6</sup><br>9    | 7                               | <sup>5 6</sup><br>7              |
| <sup>2 3</sup><br>4 | <sup>2 3</sup><br>4    | 9                 | <sup>3</sup><br>5<br>6   | <sup>4 5 6</sup><br>7 | 8                        | <sup>2</sup><br>5<br>6 | <sup>2 3</sup><br>5<br>6        | <sup>2</sup><br>5<br>6           |
| <sup>1</sup><br>7   | <sup>1</sup><br>5      | <sup>1</sup><br>5 | 4                        | <sup>1</sup><br>5     | <sup>1 2</sup><br>7      | 3                      | <sup>1 2</sup><br>5<br>6        | <sup>2</sup><br>5<br>6           |
| <sup>1</sup><br>7   | <sup>3</sup><br>6      | <sup>1</sup><br>5 | <sup>2 3</sup><br>5<br>8 | <sup>1 2 3</sup><br>7 | <sup>1 2</sup><br>5      | 4                      | <sup>2</sup><br>5               | <sup>2</sup><br>5                |
| <sup>1</sup><br>4   | <sup>3</sup><br>4<br>5 | 2                 | <sup>3</sup><br>5        | <sup>1</sup><br>5     | <sup>6</sup><br>7 8      | <sup>1</sup><br>5      | <sup>1</sup><br>5               | <sup>9</sup><br>8                |

|                         |                       |                              |                          |                            |                          |                             |                       |                             |
|-------------------------|-----------------------|------------------------------|--------------------------|----------------------------|--------------------------|-----------------------------|-----------------------|-----------------------------|
| <sup>2</sup><br>5<br>9  | <sup>1 2</sup><br>4   | <sup>1 2</sup><br>4 5<br>6 9 | <sup>1 2 3</sup><br>4 5  | <sup>3</sup><br>4 5 6      | <sup>1 2 3</sup><br>4 5  | 8                           | 7                     | <sup>2</sup><br>4<br>6<br>9 |
| <sup>2</sup><br>5<br>8  | 7                     | <sup>2</sup><br>4 5 6        | <sup>2</sup><br>4 5<br>8 | 9                          | <sup>2</sup><br>4 5<br>8 | 3                           | 1                     | <sup>2</sup><br>4<br>6      |
| <sup>2</sup><br>8 9     | <sup>1 2</sup><br>6 4 | 3                            | <sup>1 2</sup><br>4      | <sup>4</sup><br>6<br>8     | 7                        | <sup>2</sup><br>4<br>6<br>9 | 5                     |                             |
| 1                       | <sup>2 3</sup><br>4   | <sup>2</sup><br>7            | 6                        | <sup>3</sup><br>4 5<br>7 8 | <sup>3</sup><br>4 5<br>8 | <sup>5</sup><br>9           | <sup>2 3</sup><br>8 9 | <sup>2</sup><br>8 9         |
| <sup>3</sup><br>7       | <sup>6</sup><br>5     | <sup>6</sup><br>7 9          | <sup>1</sup><br>7 8      | 2                          | <sup>1</sup><br>8        | <sup>1</sup><br>6<br>9      | 4                     | <sup>1</sup><br>6<br>8 9    |
| <sup>2 3</sup><br>6     | <sup>2 3</sup><br>4   | 8                            | <sup>1</sup><br>4 5      | <sup>3</sup><br>4 5        | 9                        | <sup>1</sup><br>5 6         | <sup>2 3</sup><br>6   | 7                           |
| 4                       | <sup>1</sup><br>8     | <sup>3</sup><br>7            | <sup>5</sup><br>7 8 9    | <sup>5</sup><br>7 8        | <sup>5</sup><br>8        | 2                           | <sup>6</sup><br>8 9   | <sup>1</sup><br>6<br>8 9    |
| <sup>2 3</sup><br>7 8 9 | <sup>6</sup><br>7     | <sup>2</sup><br>9            | <sup>4</sup><br>7 8 9    | <sup>1</sup><br>7 8 9      | <sup>2 3</sup><br>4      | <sup>4</sup><br>7           | <sup>5</sup><br>8 9   | <sup>4</sup><br>8 9         |
| <sup>2</sup><br>7 8 9   | <sup>1 2</sup><br>8 9 | <sup>1 2</sup><br>5          | <sup>2</sup><br>4 5      | <sup>4 5</sup><br>7 8      | 6                        | <sup>1</sup><br>4           |                       | 3                           |

|                        |                        |                        |                              |                     |                          |                     |                       |                        |
|------------------------|------------------------|------------------------|------------------------------|---------------------|--------------------------|---------------------|-----------------------|------------------------|
| 6                      | <sup>1</sup><br>8 9    | <sup>1</sup><br>4<br>7 | <sup>1 2</sup><br>4 5<br>7 8 | <sup>1</sup><br>4   | <sup>2</sup><br>4 5<br>8 | 3                   | <sup>1 2</sup><br>5   | <sup>1</sup><br>4<br>7 |
| <sup>3</sup><br>4<br>7 | 5                      | <sup>1</sup><br>4<br>7 | <sup>1 2</sup><br>4          | <sup>2 3</sup><br>4 | <sup>1 2</sup><br>4      | 8                   | <sup>1</sup><br>4     | <sup>6</sup><br>7      |
| <sup>3</sup><br>4      | <sup>1</sup><br>8      | 2                      | <sup>1</sup><br>4 5<br>7 8   | <sup>1</sup><br>4   | <sup>3</sup><br>6<br>7 8 | 6                   | <sup>1</sup><br>4     | <sup>5</sup><br>7      |
| 8                      | <sup>1</sup><br>6<br>9 | 5                      | <sup>2</sup><br>4            | <sup>3</sup><br>6   | <sup>2 3</sup><br>4      | 7                   | <sup>1 2 3</sup><br>9 | <sup>1</sup><br>6      |
| <sup>2 3</sup><br>9    | <sup>7</sup><br>6      | <sup>1</sup><br>8 9    | <sup>2</sup><br>6<br>8 9     | <sup>5</sup><br>8 9 | <sup>2 3</sup><br>8 9    | <sup>1 2</sup><br>6 | <sup>1</sup><br>8     | <sup>3</sup><br>6      |
| <sup>2 3</sup><br>4    | <sup>3</sup><br>6      | <sup>3</sup><br>4      | <sup>2</sup><br>6<br>7 8 9   | <sup>3</sup><br>6   | <sup>1</sup><br>8 9      | 1                   | <sup>2</sup><br>6     | <sup>2 3</sup><br>9    |
| 1                      | 2                      | <sup>6</sup><br>7      | <sup>3</sup><br>4            | <sup>6</sup><br>8   | <sup>4</sup><br>8 9      | 5                   | <sup>7</sup><br>9     | <sup>4</sup><br>7 8    |
| <sup>5</sup><br>7      | <sup>3</sup><br>4      | <sup>1</sup><br>7      | <sup>5</sup><br>8 9          | <sup>2</sup><br>8 9 | <sup>1</sup><br>8 9      | 6                   | <sup>1</sup><br>7 8   | <sup>3</sup><br>8 9    |
| <sup>5</sup><br>9      | <sup>3</sup><br>6      | 8                      | <sup>1</sup><br>4 5 6        | <sup>1</sup><br>4   | <sup>6</sup><br>7        | 7                   | <sup>1</sup><br>4     | <sup>3</sup><br>9      |

|          |              |             |            |              |               |                 |               |          |
|----------|--------------|-------------|------------|--------------|---------------|-----------------|---------------|----------|
| 2<br>5   | 1 2<br>7 6   | 8           | 4<br>7     | 2<br>5       | 2<br>5 6<br>9 | 1 2<br>6<br>9   | 3             | 1<br>9   |
| 2<br>4 5 | 1 2<br>7 6   | 1<br>4<br>7 | 3<br>7     | 2<br>5       | 2<br>5 6<br>9 | 1 2<br>6<br>8 9 | 1<br>6<br>8 9 | 1<br>8 9 |
| 9        | 2 3<br>6     | 2 3<br>6    | 2<br>8     | 2<br>8       | 1             | 5               | 7             | 4        |
| 7        | 9            | 2 3<br>5 6  | 1 2<br>5 6 | 1 2 3<br>4 5 | 8             | 1<br>6          | 1<br>4        | 1<br>6   |
| 2 3<br>8 | 2 3<br>8     | 2 3<br>6    | 1 2<br>6   | 1 2 3<br>4   | 7             | 1<br>6          | 1<br>4        | 5<br>9   |
| 1        | 4            | 3<br>5 6    | 9          | 5<br>3       | 3<br>5 6      | 7 8             | 2             | 7 8      |
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|               |            |                 |          |               |            |               |                      |
|---------------|------------|-----------------|----------|---------------|------------|---------------|----------------------|
| 2             | 4<br>8 9   | 3<br>6 4<br>5 8 | 7        | 3<br>6<br>8 9 | 1          | 4<br>8        | 4 5 6<br>8           |
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|                 |                 |               |               |                   |            |             |             |                    |
|-----------------|-----------------|---------------|---------------|-------------------|------------|-------------|-------------|--------------------|
| 6               | 2<br>4 5<br>8   | 2 3<br>5<br>8 | 1             | 2 3<br>4 5<br>9   | 2 3<br>4   | 7           | 4<br>9      | 2<br>5<br>9        |
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|               |                  |                 |               |                 |            |             |                      |
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|             |               |               |                   |                 |               |                           |                 |
|-------------|---------------|---------------|-------------------|-----------------|---------------|---------------------------|-----------------|
| 1           | 2             | 3<br>6<br>8 9 | 4                 | 5<br>7 9        | 3<br>5<br>9   | 5<br>7 8                  | 6<br>7 9        |
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| 9           | 6             | 3<br>4<br>8   | 3<br>5<br>7 8     | 1               | 3<br>5<br>7 8 | 4 5<br>7                  | 2<br>4<br>7     |

|            |            |               |                  |          |               |              |             |                         |
|------------|------------|---------------|------------------|----------|---------------|--------------|-------------|-------------------------|
| 1 2<br>5 6 | 1 2<br>6   | 1 2<br>5<br>8 | 1<br>3<br>6<br>8 | 7        | 1 2 3<br>6    | 9            | 4           | 1 2 3<br>6              |
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|               |             |                  |                 |                 |                     |                   |                       |                 |
|---------------|-------------|------------------|-----------------|-----------------|---------------------|-------------------|-----------------------|-----------------|
| 1<br>5<br>9   | 1<br>3<br>8 | 1<br>5 6<br>8 9  | 2 3<br>6<br>7 8 | 1 2 3<br>7<br>9 | 1 2 3<br>5 6<br>8 9 | 2 3<br>5 6<br>7 8 | 4                     | 2<br>5 6<br>7 8 |
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|        |          |        |        |             |            |             |               |             |
|--------|----------|--------|--------|-------------|------------|-------------|---------------|-------------|
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|          |          |            |          |            |          |            |          |              |          |            |       |
|----------|----------|------------|----------|------------|----------|------------|----------|--------------|----------|------------|-------|
| 5        | 3        | 1<br>7 8   | 1<br>8   | 2          | 1<br>4 7 | 6          | 9        | 1<br>4 7     | 6<br>8   | 1<br>4 8   | 6     |
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|               |                 |          |            |             |                  |                    |                  |            |                 |                  |             |
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| 1             | 4 5             | 2        | 7          | 4           | 3                | 9                  | 3                | 6          | 8               | 3                | 5 6         |
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|             |               |                 |          |            |                 |            |            |          |            |
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| 4           | 2<br>8 9      | 1               | 3<br>7   | 9          | 7 8             | 7 8 9      | 2<br>5     | 6        |            |
| 3<br>7      | 5 6<br>8      | 3               | 2        | 4 5<br>8   | 4 5<br>8        | 9          | 1          | 4        | 6          |

|              |                |            |            |          |        |            |            |             |             |
|--------------|----------------|------------|------------|----------|--------|------------|------------|-------------|-------------|
| 1 2 3<br>5   | 1 2 3<br>5     | 1 2<br>5   | 1 2<br>5   | 8        | 1<br>5 | 3<br>7     | 4          | 2<br>6<br>9 | 2<br>6<br>9 |
| 4            | 1 2 3<br>5     | 8 9        | 1 2<br>5 6 | 3<br>5 6 | 1<br>5 | 3<br>5     | 1          | 8 9         | 7           |
| 1 2<br>5     | 1 2<br>5       | 6          | 9          | 4        | 1<br>7 | 5          | 1          | 2<br>8      | 3           |
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| 1 2<br>4     | 3              | 6<br>7 8   | 6<br>7     | 9        | 7 8 9  | 5          | 6<br>7 8 9 | 4           | 2           |
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| 5 6<br>7     | 4 5<br>9       | 4 5<br>9   | 3<br>9     | 2        | 5      | 6<br>7 8 9 | 1          | 4           | 6           |



|                                 |                               |                               |   |                               |                                 |                               |                                 |                                   |
|---------------------------------|-------------------------------|-------------------------------|---|-------------------------------|---------------------------------|-------------------------------|---------------------------------|-----------------------------------|
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| <sup>2</sup> <sub>4 7</sub>     | <sup>2</sup> <sub>4 5</sub>   | 6                             | 1 | <sup>5</sup> <sub>8 9</sub>   | <sup>5</sup> <sub>7 9</sub>     | <sup>2</sup> <sub>8</sub>     | <sup>2</sup> <sub>7 8 9</sub>   | 3                                 |
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| <sup>3</sup> <sub>4 8</sub>     | <sup>1 3</sup> <sub>4 6</sub> | 2                             | 7 | <sup>5 6</sup> <sub>9</sub>   | <sup>5 6</sup> <sub>9</sub>     | <sup>1 3</sup> <sub>8</sub>   | <sup>1 3</sup> <sub>4 5</sub>   | <sup>5</sup> <sub>8</sub>         |
| 5                               | 9                             | <sup>3</sup> <sub>7</sub>     | 8 | 1                             | 4                               | <sup>2 3</sup> <sub>6</sub>   | <sup>2 3</sup> <sub>7</sub>     | <sup>2</sup> <sub>6</sub>         |
| <sup>4</sup> <sub>7 8</sub>     | <sup>1 4</sup> <sub>6 7</sub> | <sup>6 4</sup> <sub>8</sub>   | 3 | <sup>2</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5 6</sub>     | 9                             | <sup>1</sup> <sub>4 5</sub>     | <sup>5</sup> <sub>7 8</sub>       |

|                                 |                               |                             |                             |                             |                               |                               |                               |                           |
|---------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|
| <sup>1 3</sup> <sub>7 8</sub>   | 2                             | <sup>3</sup> <sub>8</sub>   | <sup>4 6</sup> <sub>7</sub> | 5                           | <sup>3</sup> <sub>7</sub>     | <sup>1 1</sup> <sub>8 6</sub> | <sup>1 4</sup> <sub>8</sub>   | 9                         |
| 4 5                             | <sup>4 5</sup> <sub>9</sub>   | 6                           | 1                           | 8                           | <sup>2</sup> <sub>9</sub>     | <sup>2</sup> <sub>5</sub>     | 7                             | 3                         |
| <sup>1 3</sup> <sub>7 8 9</sub> | <sup>5</sup> <sub>7 8</sub>   | <sup>5</sup> <sub>8 9</sub> | <sup>2</sup> <sub>7</sub>   | <sup>2</sup> <sub>6 7</sub> | <sup>2 3</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>5 6</sub> | <sup>1 4</sup> <sub>5 8</sub> | <sup>2</sup> <sub>4</sub> |
| <sup>2 3</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>7</sub>     | 4                           | 5                           | <sup>1</sup> <sub>6</sub>   | <sup>1</sup> <sub>6</sub>     | <sup>2</sup> <sub>7</sub>     | <sup>3</sup> <sub>9</sub>     | 8                         |
| <sup>2</sup> <sub>7</sub>       | <sup>5 6</sup> <sub>7</sub>   | <sup>2</sup> <sub>5</sub>   | 9                           | 3                           | 8                             | <sup>1 2</sup> <sub>7</sub>   | <sup>1 4</sup> <sub>4</sub>   | <sup>2</sup> <sub>4</sub> |
| <sup>3</sup> <sub>8 9</sub>     | 1                             | <sup>3</sup> <sub>8 9</sub> | <sup>2</sup> <sub>4 7</sub> | <sup>2</sup> <sub>4 7</sub> | <sup>2</sup> <sub>7</sub>     | <sup>3</sup> <sub>9</sub>     | 6                             | 5                         |
| <sup>3</sup> <sub>4 5 6 8</sub> | <sup>3</sup> <sub>4 5 6</sub> | 1                           | <sup>6</sup> <sub>7 8</sub> | <sup>6</sup> <sub>7 9</sub> | <sup>5 6</sup> <sub>7 9</sub> | <sup>5</sup> <sub>8 9</sub>   | 2                             | <sup>6</sup> <sub>7</sub> |
| <sup>2 3</sup> <sub>5 6 8</sub> | <sup>3</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5</sub> | <sup>2</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub>7</sub> | <sup>6</sup> <sub>9</sub>     | <sup>4</sup> <sub>5 8 9</sub> | <sup>3 1</sup> <sub>9 7</sub> | <sup>6</sup> <sub>6</sub> |
| <sup>2</sup> <sub>5 6</sub>     | 9                             | 7                           | 3                           | <sup>1 2</sup> <sub>6</sub> | <sup>1 2</sup> <sub>5 6</sub> | 4                             | <sup>5</sup> <sub>8</sub>     | <sup>1</sup> <sub>6</sub> |

|                             |                               |                             |                             |                               |                               |                             |                             |
|-----------------------------|-------------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|
| 5                           | 8                             | 2                           | <sup>3</sup> <sub>7 9</sub> | <sup>3</sup> <sub>7 9</sub>   | 6                             | 4                           | 1                           |
| <sup>4</sup> <sub>7 9</sub> | <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>9</sub>   | 6                           | 8                             | 1                             | <sup>2 3</sup> <sub>7</sub> | <sup>2 3</sup> <sub>7</sub> |
| 6                           | <sup>3</sup> <sub>7</sub>     | 1                           | 4                           | <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>5</sub>     | 9                           | <sup>3</sup> <sub>7 8</sub> |
| <sup>1</sup> <sub>9</sub>   | 2                             | <sup>5</sup> <sub>8 9</sub> | <sup>1</sup> <sub>8 9</sub> | 3                             | 4                             | 7                           | <sup>1</sup> <sub>5 8</sub> |
| 4                           | <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>8 9</sub> | 5                           | <sup>1</sup> <sub>6</sub>     | <sup>6</sup> <sub>7 8 9</sub> | 2                           | <sup>1 3</sup> <sub>8</sub> |
| <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>5 6</sub>   | <sup>3</sup> <sub>5 8</sub> | <sup>1</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub>6</sub>   | <sup>2</sup> <sub>7 8</sub>   | 4                           | <sup>5</sup> <sub>8</sub>   |
| <sup>2</sup> <sub>8</sub>   | 9                             | 7                           | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>4 5 6</sub> | <sup>5 6</sup> <sub>8</sub>   | 3                           | <sup>2</sup> <sub>4 5</sub> |
| <sup>3</sup> <sub>8</sub>   | <sup>4 5</sup> <sub>4 5</sub> | 2                           | <sup>3</sup> <sub>7 9</sub> | <sup>8</sup> <sub>8</sub>     | 1                             | 6                           | <sup>7</sup> <sub>9</sub>   |
| <sup>2 3</sup> <sub>7</sub> | 1                             | 6                           | <sup>3</sup> <sub>4 5</sub> | <sup>3</sup> <sub>7 9</sub>   | 8                             | <sup>2</sup> <sub>5</sub>   | <sup>2</sup> <sub>4 5</sub> |

|                               |                               |                             |                               |                               |                                 |                                 |                                   |                               |
|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-----------------------------------|-------------------------------|
| <sup>1 2</sup> <sub>5 6</sub> | <sup>1 2</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>4</sub> | <sup>1 3</sup> <sub>8</sub>   | 7                             | <sup>1 2 3</sup> <sub>6</sub>   | 9                               | 4                                 | <sup>1 2 3</sup> <sub>6</sub> |
| <sup>1 2</sup> <sub>6</sub>   | 7                             | <sup>1 2</sup> <sub>4</sub> | <sup>1 3</sup> <sub>8</sub>   | 9                             | <sup>1 2 3</sup> <sub>4 6</sub> | <sup>2 3</sup> <sub>8</sub>     | <sup>1 3</sup> <sub>6</sub>       | 5                             |
| 3                             | <sup>1 2</sup> <sub>4</sub>   | <sup>1 2</sup> <sub>4</sub> | <sup>1 2</sup> <sub>8 9</sub> | <sup>1</sup> <sub>6</sub>     | <sup>1 2</sup> <sub>4</sub>     | 5                               | <sup>2</sup> <sub>8</sub>         | <sup>1 2</sup> <sub>6</sub>   |
| <sup>2</sup> <sub>5</sub>     | 8                             | 7                           | <sup>2 3</sup> <sub>5</sub>   | <sup>2 3</sup> <sub>6 9</sub> | <sup>1</sup> <sub>5</sub>       | 1                               | <sup>5 6</sup> <sub>9</sub>       | <sup>2 3</sup> <sub>6 9</sub> |
| 4                             | 6                             | 3                           | <sup>1</sup> <sub>5</sub>     | 8                             | <sup>1 2</sup> <sub>9</sub>     | <sup>2</sup> <sub>5</sub>       | <sup>5</sup> <sub>9</sub>         | <sup>2</sup> <sub>7 9</sub>   |
| <sup>1 2</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>9</sub>   | <sup>1 2</sup> <sub>5</sub> | <sup>3</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5</sub>   | 7                               | <sup>2 3</sup> <sub>4 5 6</sub> | <sup>2 3</sup> <sub>4 6</sub>     | <sup>2 3</sup> <sub>9</sub>   |
| 8                             | <sup>1 2 3</sup> <sub>4</sub> | <sup>1 2</sup> <sub>4</sub> | <sup>1 2</sup> <sub>6 9</sub> | 7                             | <sup>1 3</sup> <sub>4 5</sub>   | <sup>1 3</sup> <sub>4</sub>     | <sup>1</sup> <sub>4 5 6</sub>     | <sup>1</sup> <sub>5 6</sub>   |
| 7                             | <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>4</sub>   | <sup>1</sup> <sub>6 9</sub>   | <sup>1 3</sup> <sub>5</sub>   | <sup>1 3</sup> <sub>4 5</sub>   | <sup>1 3</sup> <sub>4</sub>     | <sup>4 5 6</sup> <sub>4 5 6</sub> | 2 8                           |
| <sup>1</sup> <sub>9</sub>     | 5                             | <sup>1</sup> <sub>4</sub>   | <sup>2</sup> <sub>6</sub>     | 8                             | <sup>3</sup> <sub>4 7</sub>     | <sup>1 3</sup> <sub>9</sub>     | <sup>1 3</sup> <sub>4 7</sub>     | <sup>1 3</sup> <sub>9</sub>   |

|                               |                               |                               |                                 |                             |                               |                                 |                                   |                                 |
|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------------------------|---------------------------------|-----------------------------------|---------------------------------|
| <sup>1 3</sup> <sub>9</sub>   | 4                             | <sup>3</sup> <sub>9</sub>     | 5                               | <sup>3</sup> <sub>7 8</sub> | <sup>1 6</sup> <sub>7 8</sub> | <sup>1</sup> <sub>7 8 9</sub>   | <sup>1 2</sup> <sub>7 8 9</sub>   | <sup>1 2</sup> <sub>8 9</sub>   |
| 8                             | <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>5</sub>     | <sup>4</sup> <sub>7</sub>       | 9                           | <sup>1</sup> <sub>7</sub>     | <sup>1</sup> <sub>4 7</sub>     | 3                                 | <sup>1</sup> <sub>4 6</sub>     |
| <sup>1 3</sup> <sub>9</sub>   | 7                             | 6                             | <sup>4</sup> <sub>8</sub>       | 2                           | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>4 5 8 9</sub> | <sup>1</sup> <sub>8 9</sub>       | <sup>1</sup> <sub>4 5 8 9</sub> |
| <sup>2 3</sup> <sub>7 9</sub> | 1                             | 4                             | 6                               | <sup>5</sup> <sub>7 8</sub> | <sup>2</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>8 9</sub>       | <sup>2</sup> <sub>8 9</sub>     |
| 6                             | <sup>2 3</sup> <sub>5 8</sub> | <sup>2 3</sup> <sub>5 8</sub> | <sup>2</sup> <sub>8</sub>       | <sup>1</sup> <sub>4</sub>   | 9                             | <sup>1 3</sup> <sub>4 5 8</sub> | <sup>1 2</sup> <sub>8</sub>       | 7                               |
| <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>4</sub>   | 3                             | <sup>1 2</sup> <sub>8 9</sub>   | <sup>1 2</sup> <sub>4 5 8 9</sub> |                                 |
| <sup>2 3</sup> <sub>9</sub>   | <sup>2 3</sup> <sub>8 9</sub> | 1                             | <sup>2 3</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>7 8</sub> | 4                             | <sup>5</sup> <sub>7 8 9</sub>   | <sup>6</sup> <sub>8 9</sub>       |                                 |
| <sup>2</sup> <sub>4 5</sub>   | 6                             | <sup>2</sup> <sub>5 8 9</sub> | <sup>2</sup> <sub>7 8 9</sub>   | <sup>5</sup> <sub>7 8</sub> | <sup>2</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>7 8 9</sub>   | <sup>1</sup> <sub>4 7 8 9</sub>   | 3                               |
| <sup>4 5</sup> <sub>9</sub>   | 7                             | <sup>3</sup> <sub>8 9</sub>   | 1                               | <sup>5 6</sup> <sub>8</sub> | <sup>5 6</sup> <sub>8</sub>   | 2                               | <sup>4</sup> <sub>8 9</sub>       | <sup>6</sup> <sub>8 9</sub>     |

|                             |                           |                             |                           |                           |                           |                               |                               |                               |
|-----------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|---------------------------|-------------------------------|-------------------------------|-------------------------------|
| <sup>3</sup> <sub>8</sub>   | <sup>6</sup> <sub>8</sub> | 1                           | 4                         | <sup>3</sup> <sub>6</sub> | 7                         | 9                             | 2                             | 5                             |
| 5                           | <sup>4</sup> <sub>7</sub> | <sup>3</sup> <sub>9</sub>   | 2                         | 1                         | <sup>3</sup> <sub>9</sub> | 6                             | 8                             | <sup>4</sup> <sub>7</sub>     |
| <sup>2</sup> <sub>7 9</sub> | <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>6 9</sub> | 8                         | <sup>6</sup> <sub>9</sub> | 5                         | <sup>4</sup> <sub>7</sub>     | 1                             | 3                             |
| 4                           | 5                         | 8                           | 6                         | <sup>3</sup> <sub>9</sub> | <sup>3</sup> <sub>9</sub> | 1                             | 7                             | 2                             |
| <sup>7</sup> <sub>9</sub>   | 1                         | <sup>6</sup> <sub>9</sub>   | <sup>5</sup> <sub>7</sub> | 2                         | <sup>4</sup> <sub>8</sub> | 3                             | <sup>5 6</sup> <sub>4 8</sub> |                               |
| <sup>2 3</sup> <sub>7</sub> | <sup>6</sup> <sub>7</sub> | <sup>2 3</sup> <sub>7</sub> | <sup>5</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | 1                         | <sup>4</sup> <sub>8</sub>     | <sup>5 6</sup> <sub>5 6</sub> | 9                             |
| 6                           | 3                         | 4                           | 1                         | 5                         | 2                         | <sup>7 8</sup> <sub>7 8</sub> | 9                             | <sup>7 8</sup> <sub>7 8</sub> |
| <sup>8</sup> <sub>9</sub>   | <sup>8</sup> <sub>9</sub> | 5                           | 3                         | 7                         | 6                         | 2                             | 4                             | 1                             |
| 1                           | 2                         | 7                           | 9                         | <sup>4</sup> <sub>8</sub> | <sup>4</sup> <sub>8</sub> | 5                             | 3                             | 6                             |

|   |                           |                           |                           |                           |                           |                           |                           |                           |
|---|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 1 | 2                         | 3                         | 4                         | <sup>5</sup> <sub>7</sub> | <sup>5</sup> <sub>7</sub> | <sup>6</sup> <sub>8</sub> | <sup>6</sup> <sub>8</sub> | 9                         |
| 4 | 5                         | 6                         | 1                         | 8                         | 9                         | <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>7</sub> | 3                         |
| 7 | <sup>8</sup> <sub>9</sub> | <sup>8</sup> <sub>9</sub> | 3                         | 6                         | 2                         | 4                         | 5                         | 1                         |
| 2 | 4                         | <sup>1</sup> <sub>7</sub> | <sup>5</sup> <sub>7</sub> | <sup>1</sup> <sub>5</sub> | 6                         | 3                         | <sup>7</sup> <sub>9</sub> | 8                         |
| 3 | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>8</sub> | 9                         | 4                         | <sup>1</sup> <sub>7</sub> | 5                         | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>6</sub> |
| 6 | <sup>7</sup> <sub>9</sub> | 5                         | 2                         | 3                         | 8                         | <sup>7</sup> <sub>9</sub> | 1                         | 4                         |
| 5 | <sup>1</sup> <sub>7</sub> | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>9</sub> | <sup>1</sup> <sub>3</sub> | <sup>2</sup> <sub>8</sub> | 4                         | <sup>2</sup> <sub>6</sub> |
| 8 | <sup>1</sup> <sub>7</sub> | <sup>3</sup> <sub>7</sub> | 2                         | <sup>6</sup> <sub>7</sub> | <sup>1</sup> <sub>9</sub> | 4                         | <sup>1</sup> <sub>6</sub> | <sup>3</sup> <sub>9</sub> |
| 9 | 6                         | 4                         | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | 7                         |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 6                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>5</sub> | 9                         | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>3</sub> | 4                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>7</sub> |
| <sup>2</sup> <sub>7</sub> | 4                         | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> | 5                         | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>8</sub> |
| <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>3</sub> | 8                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>7</sub> | 6                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> |
| 5                         | <sup>1</sup> <sub>8</sub> | <sup>6</sup> <sub>9</sub> | 7                         | <sup>1</sup> <sub>4</sub> | <sup>6</sup> <sub>8</sub> | 3                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>9</sub> |
| 4                         | 7                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>9</sub> | 2                         | <sup>1</sup> <sub>4</sub> | 5                         | 6                         | <sup>8</sup> <sub>9</sub> |
| <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>9</sub> | <sup>3</sup> <sub>6</sub> | 2                         | <sup>1</sup> <sub>8</sub> | <sup>1</sup> <sub>6</sub> | 5                         | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>9</sub> |
| 1                         | <sup>2</sup> <sub>5</sub> | <sup>4</sup> <sub>8</sub> | 6                         | <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | <sup>2</sup> <sub>9</sub> | <sup>4</sup> <sub>5</sub> | 3                         |
| <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | <sup>4</sup> <sub>9</sub> | 3                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>7</sub> | <sup>2</sup> <sub>9</sub> | <sup>6</sup> <sub>8</sub> | <sup>2</sup> <sub>7</sub> |
| <sup>3</sup> <sub>7</sub> | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | 6                         | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>8</sub> | 2                         | <sup>4</sup> <sub>5</sub> | 1                         |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>6</sub> | 5                         | <sup>3</sup> <sub>7</sub> | <sup>4</sup> <sub>6</sub> | <sup>3</sup> <sub>9</sub> |
| 1                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>9</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | 7                         | <sup>2</sup> <sub>3</sub> |
| <sup>4</sup> <sub>5</sub> | 6                         | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>4</sub> | <sup>1</sup> <sub>3</sub> | <sup>4</sup> <sub>5</sub> | 8                         | <sup>2</sup> <sub>3</sub> |
| <sup>2</sup> <sub>5</sub> | <sup>1</sup> <sub>7</sub> | <sup>5</sup> <sub>8</sub> | 6                         | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | 4                         | <sup>1</sup> <sub>7</sub> | <sup>5</sup> <sub>9</sub> |
| <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>7</sub> | <sup>5</sup> <sub>8</sub> | 9                         | <sup>2</sup> <sub>7</sub> | 1                         | 3                         | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>8</sub> |
| <sup>4</sup> <sub>7</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | 5                         | 9                         | 6                         | <sup>1</sup> <sub>4</sub> | 2                         | <sup>4</sup> <sub>8</sub> |
| <sup>4</sup> <sub>9</sub> | 8                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>9</sub> | 6                         | 2                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>9</sub> |
| 6                         | 2                         | 7                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | <sup>4</sup> <sub>9</sub> | 5                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>9</sub> |
| 3                         | <sup>1</sup> <sub>4</sub> | 5                         | <sup>1</sup> <sub>4</sub> | <sup>7</sup> <sub>8</sub> | 7                         | <sup>1</sup> <sub>8</sub> | 2                         | <sup>6</sup> <sub>9</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 9                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>4</sub> | 7                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>5</sub> | 3                         | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> |
| <sup>4</sup> <sub>8</sub> | 5                         | <sup>3</sup> <sub>8</sub> | 2                         | <sup>4</sup> <sub>6</sub> | <sup>4</sup> <sub>9</sub> | 1                         | 7                         | <sup>2</sup> <sub>8</sub> |
| <sup>4</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>3</sub> | 7                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>8</sub> |
| 3                         | <sup>1</sup> <sub>8</sub> | <sup>4</sup> <sub>5</sub> | 6                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>9</sub> | 7                         | <sup>2</sup> <sub>4</sub> | <sup>1</sup> <sub>5</sub> |
| <sup>4</sup> <sub>7</sub> | 6                         | <sup>1</sup> <sub>4</sub> | 5                         | <sup>1</sup> <sub>9</sub> | <sup>1</sup> <sub>2</sub> | 3                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>8</sub> |
| <sup>4</sup> <sub>5</sub> | <sup>1</sup> <sub>7</sub> | 2                         | <sup>1</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>3</sub> | 8                         | <sup>1</sup> <sub>4</sub> | <sup>4</sup> <sub>5</sub> |
| 1                         | <sup>2</sup> <sub>3</sub> | <sup>5</sup> <sub>8</sub> | 4                         | <sup>7</sup> <sub>8</sub> | <sup>2</sup> <sub>9</sub> | 6                         | <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>3</sub> |
| <sup>2</sup> <sub>5</sub> | 4                         | <sup>5</sup> <sub>9</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>9</sub> | 8                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>3</sub> |
| <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>7</sub> | 6                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>9</sub> | 3                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>5</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>4</sup> <sub>7</sub> | 2                         | <sup>4</sup> <sub>6</sub> | 8                         | <sup>4</sup> <sub>9</sub> | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | 5                         |
| 1                         | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>6</sub> | <sup>5</sup> <sub>7</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>7</sub> | 9                         | 3                         | <sup>2</sup> <sub>6</sub> |
| <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub> | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>1</sub> | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>6</sup> <sub>8</sub> |
| <sup>5</sup> <sub>7</sub> | <sup>5</sup> <sub>8</sub> | 8                         | 4                         | <sup>5</sup> <sub>9</sub> | <sup>3</sup> <sub>7</sub> | 2                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>3</sub> |
| <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub> | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>9</sub> | <sup>2</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>8</sub> |
| <sup>2</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | 1                         | <sup>5</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>8</sub> | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>6</sub> | <sup>3</sup> <sub>9</sub> |
| 6                         | 1                         | <sup>2</sup> <sub>5</sub> | 9                         | 8                         | 4                         | <sup>5</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>3</sub> |
| <sup>7</sup> <sub>8</sub> | <sup>7</sup> <sub>9</sub> | <sup>7</sup> <sub>9</sub> | 2                         | 3                         | 5                         | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>6</sub> | 4                         |
| 3                         | <sup>4</sup> <sub>5</sub> | <sup>2</sup> <sub>4</sub> | <sup>1</sup> <sub>6</sub> | 7                         | <sup>1</sup> <sub>6</sub> | <sup>5</sup> <sub>8</sub> | <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>8</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 2                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | 9                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | 8                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> |
| <sup>1</sup> <sub>9</sub> | <sup>1</sup> <sub>8</sub> | <sup>1</sup> <sub>9</sub> | 4                         | <sup>1</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | 7                         | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>6</sub> |
| 6                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | 2                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>3</sub> |
| <sup>1</sup> <sub>9</sub> | 4                         | <sup>1</sup> <sub>5</sub> | 3                         | <sup>2</sup> <sub>8</sub> | <sup>7</sup> <sub>8</sub> | 7                         | <sup>1</sup> <sub>5</sub> | <sup>5</sup> <sub>6</sub> |
| <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>7</sub> | <sup>6</sup> <sub>8</sub> | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | 9                         | 2                         |
| 8                         | <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>6</sub> | 1                         | <sup>2</sup> <sub>4</sub> | <sup>9</sup> <sub>8</sub> | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>7</sub> | <sup>3</sup> <sub>9</sub> |
| 5                         | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> | <sup>6</sup> <sub>9</sub> | <sup>1</sup> <sub>3</sub> | <sup>2</sup> <sub>8</sub> | <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>8</sub> | <sup>4</sup> <sub>9</sub> |
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| 4                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>3</sub> | 5                         | <sup>1</sup> <sub>3</sub> | <sup>8</sup> <sub>9</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>6</sub> | <sup>6</sup> <sub>9</sub> |

|                       |                     |                       |                       |                       |                       |                   |                     |                   |                   |                   |
|-----------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------|---------------------|-------------------|-------------------|-------------------|
| <sup>3</sup><br>7 8 9 | <sup>1</sup><br>7 8 | <sup>3</sup><br>7 8 9 | <sup>1</sup><br>7 8 9 | <sup>3</sup><br>7 8 9 | <sup>5</sup><br>7 8   | 4                 | <sup>6</sup><br>9   | <sup>5</sup><br>8 | <sup>3</sup><br>2 | <sup>3</sup><br>7 |
| <sup>2</sup><br>7 8   | <sup>2</sup><br>7 8 | 4                     | 3                     | 1                     | <sup>5</sup><br>7 8   | <sup>5</sup><br>8 | 9                   | 6                 |                   |                   |
| 5                     | <sup>3</sup><br>7 8 | <sup>6</sup><br>9     | <sup>7</sup><br>8     | <sup>6</sup><br>9     | 2                     | 1                 | <sup>4</sup><br>7 8 | <sup>4</sup><br>7 | <sup>3</sup>      |                   |
| 1                     | <sup>2</sup><br>4   | <sup>2</sup><br>8     | <sup>2</sup><br>8 9   | <sup>2</sup><br>4     | <sup>2</sup><br>8     | <sup>3</sup><br>4 | <sup>6</sup><br>8 9 | 7                 | <sup>6</sup><br>8 | 5                 |
| <sup>6</sup><br>7 8 9 | 5                   | <sup>6</sup><br>7 8 9 | <sup>1</sup><br>7 8   | <sup>6</sup><br>7 8 9 | <sup>1</sup><br>7 8 9 | 4                 | 3                   | 2                 |                   |                   |
| <sup>2</sup><br>4     | <sup>2</sup><br>8   | <sup>2</sup><br>6     | <sup>2</sup><br>7 8   | <sup>2</sup><br>4     | <sup>5</sup><br>7 8   | <sup>3</sup><br>4 | <sup>6</sup><br>7 8 | 1                 | 9                 |                   |
| <sup>3</sup><br>4     | <sup>1</sup><br>7 8 | <sup>3</sup><br>4 5   | <sup>1</sup><br>2     | <sup>2</sup><br>3     | <sup>1</sup><br>4     | <sup>3</sup><br>5 | 9                   | <sup>4</sup><br>5 | <sup>1</sup><br>4 | <sup>3</sup><br>7 |
| <sup>2</sup><br>4     | <sup>1</sup><br>2   | <sup>3</sup><br>4     | 5                     | 9                     | 7                     | <sup>1</sup><br>4 | <sup>3</sup><br>6   | 4                 | 6                 | 8                 |
| <sup>2</sup><br>4     | <sup>2</sup><br>7   | <sup>1</sup><br>2     | <sup>3</sup><br>6     | 8                     | <sup>1</sup><br>4     | <sup>3</sup><br>5 | <sup>2</sup><br>3   | <sup>4</sup><br>5 | <sup>1</sup><br>4 | <sup>3</sup><br>7 |

|                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
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| <sup>1</sup><br>4 | <sup>1</sup><br>5 | <sup>2</sup><br>6 | 3                 | 4                 | 5                 | <sup>2</sup><br>6 | <sup>7</sup><br>9 | 8                 | <sup>7</sup><br>9 |                   |
| <sup>4</sup><br>5 | <sup>2</sup><br>6 | <sup>4</sup><br>5 | 6                 |                   |                   | <sup>2</sup><br>6 | <sup>1</sup><br>5 | <sup>1</sup><br>3 | <sup>1</sup><br>3 | <sup>1</sup><br>2 |
| 7                 | <sup>2</sup><br>5 | <sup>6</sup><br>8 | 9                 | <sup>2</sup><br>6 | 3                 | 1                 | 4                 | 5                 | 4                 | <sup>2</sup><br>6 |
| 2                 | 4                 | <sup>1</sup><br>5 | 6                 | <sup>5</sup><br>8 | <sup>6</sup><br>8 | 7                 | <sup>1</sup><br>8 | <sup>3</sup><br>9 | <sup>1</sup><br>3 | <sup>1</sup><br>6 |
| <sup>1</sup><br>3 | <sup>1</sup><br>6 | <sup>3</sup><br>6 | 8                 | <sup>2</sup><br>3 | <sup>2</sup><br>4 | 6                 | 9                 | <sup>1</sup><br>4 | <sup>3</sup><br>4 | 5                 |
| <sup>3</sup><br>5 | <sup>3</sup><br>6 | <sup>3</sup><br>9 | 7                 | <sup>3</sup><br>5 | 6                 | 1                 | <sup>4</sup><br>5 | <sup>3</sup><br>8 | 2                 | <sup>3</sup><br>6 |
| <sup>1</sup><br>4 | <sup>3</sup><br>5 | 6                 | 7                 | <sup>1</sup><br>5 | 6                 | 4                 | 6                 | 4                 | 5                 | 6                 |
| 2                 | 9                 | 8                 |                   |                   |                   |                   |                   |                   |                   |                   |
| 8                 | <sup>1</sup><br>5 | <sup>3</sup><br>6 | <sup>1</sup><br>4 | <sup>5</sup><br>6 | <sup>2</sup><br>4 | <sup>2</sup><br>6 | <sup>2</sup><br>3 | <sup>1</sup><br>5 | <sup>1</sup><br>5 | <sup>1</sup><br>3 |
| <sup>1</sup><br>5 | <sup>3</sup><br>9 | <sup>1</sup><br>5 | <sup>3</sup><br>9 | 2                 |                   |                   | <sup>5</sup><br>8 | 6                 | <sup>1</sup><br>5 | 4                 |

|                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 2                 | <sup>4</sup><br>7 | <sup>3</sup><br>8 | <sup>3</sup><br>4 | 5                 | <sup>1</sup><br>8 | <sup>3</sup><br>4 | <sup>7</sup><br>8 | 6                 | <sup>1</sup><br>7 | 9                 |
| <sup>5</sup><br>7 | 6                 | 9                 | <sup>4</sup><br>5 | 6                 | <sup>4</sup><br>7 | <sup>2</sup><br>8 | <sup>2</sup><br>6 | <sup>4</sup><br>7 | <sup>2</sup><br>8 | <sup>1</sup><br>2 |
| <sup>3</sup><br>5 | <sup>3</sup><br>6 | 1                 | <sup>2</sup><br>3 | <sup>2</sup><br>6 | <sup>2</sup><br>3 | <sup>2</sup><br>6 | 9                 | <sup>2</sup><br>5 | <sup>2</sup><br>5 | 4                 |
| 4                 | <sup>1</sup><br>8 | <sup>3</sup><br>6 | <sup>2</sup><br>3 | 9                 | <sup>2</sup><br>5 | <sup>2</sup><br>6 | 8                 | <sup>1</sup><br>2 | <sup>1</sup><br>5 | <sup>1</sup><br>2 |
| <sup>1</sup><br>3 | 5                 | <sup>2</sup><br>6 | <sup>2</sup><br>3 | 4                 | <sup>2</sup><br>7 | <sup>6</sup><br>9 | 8                 | <sup>1</sup><br>2 | <sup>1</sup><br>9 | <sup>1</sup><br>2 |
| <sup>3</sup><br>8 | <sup>3</sup><br>8 | 7                 | <sup>2</sup><br>3 | <sup>2</sup><br>5 | <sup>2</sup><br>8 | <sup>1</sup><br>4 | <sup>2</sup><br>5 | <sup>2</sup><br>4 | <sup>2</sup><br>5 | 6                 |
| <sup>5</sup><br>7 | <sup>4</sup><br>9 | <sup>6</sup><br>7 | <sup>4</sup><br>5 | 6                 | 1                 | <sup>2</sup><br>5 | <sup>2</sup><br>6 | <sup>4</sup><br>8 | <sup>2</sup><br>6 | <sup>2</sup><br>7 |
| <sup>1</sup><br>5 | <sup>3</sup><br>6 | 2                 | <sup>4</sup><br>5 | 6                 | 7                 | <sup>4</sup><br>8 | <sup>5</sup><br>6 | <sup>1</sup><br>4 | <sup>8</sup><br>9 | <sup>1</sup><br>8 |
| <sup>1</sup><br>7 | <sup>6</sup><br>4 | <sup>6</sup><br>7 | 8                 | <sup>2</sup><br>4 | <sup>2</sup><br>6 | 3                 | <sup>1</sup><br>2 | <sup>1</sup><br>4 | <sup>2</sup><br>6 | 5                 |

|                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 9                 | <sup>8</sup><br>6 | 4                 | <sup>1</sup><br>7 | <sup>1</sup><br>2 | <sup>3</sup><br>8 | 5                 | <sup>2</sup><br>3 | <sup>2</sup><br>3 | <sup>3</sup><br>7 | <sup>3</sup><br>6 |
| 2                 | 5                 |                   | 6                 | <sup>4</sup><br>8 | <sup>3</sup><br>9 | 1                 | <sup>4</sup><br>7 | <sup>3</sup><br>4 | <sup>3</sup><br>7 | <sup>3</sup><br>9 |
| 3                 | 1                 |                   |                   | <sup>2</sup><br>4 | <sup>2</sup><br>9 |                   | <sup>4</sup><br>5 | <sup>2</sup><br>6 | <sup>4</sup><br>5 | <sup>6</sup><br>8 |
| <sup>6</sup><br>8 | 7                 | <sup>2</sup><br>3 | <sup>1</sup><br>5 | <sup>1</sup><br>5 | <sup>3</sup><br>8 | 9                 | <sup>2</sup><br>3 | <sup>1</sup><br>2 | <sup>3</sup><br>6 | <sup>1</sup><br>3 |
| 4                 | <sup>3</sup><br>8 | <sup>3</sup><br>9 | 2                 | 6                 | <sup>1</sup><br>8 |                   | <sup>3</sup><br>5 | <sup>3</sup><br>7 | <sup>3</sup><br>8 | <sup>1</sup><br>5 |
| <sup>5</sup><br>8 | <sup>2</sup><br>3 | <sup>6</sup><br>9 | 1                 | 4                 | 7                 |                   | <sup>2</sup><br>3 | <sup>2</sup><br>5 | <sup>2</sup><br>6 | <sup>3</sup><br>5 |
| 7                 | <sup>3</sup><br>8 | <sup>3</sup><br>9 | <sup>1</sup><br>5 | <sup>1</sup><br>4 | <sup>1</sup><br>5 | <sup>4</sup><br>6 | <sup>4</sup><br>5 | <sup>3</sup><br>4 | <sup>3</sup><br>5 | 2                 |
| <sup>1</sup><br>5 | <sup>2</sup><br>9 | <sup>2</sup><br>5 | 3                 | <sup>1</sup><br>2 | <sup>4</sup><br>5 | <sup>1</sup><br>2 | <sup>1</sup><br>4 | <sup>1</sup><br>5 | <sup>8</sup><br>7 | 6                 |
| <sup>1</sup><br>5 | <sup>6</sup><br>4 | <sup>2</sup><br>3 | <sup>1</sup><br>5 | <sup>1</sup><br>2 | <sup>1</sup><br>2 | <sup>1</sup><br>2 | <sup>6</sup><br>5 | <sup>3</sup><br>7 | <sup>1</sup><br>5 | <sup>3</sup><br>7 |

|                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| <sup>4</sup><br>5 | 1                 | 9                 | <sup>2</sup><br>5 | <sup>4</sup><br>8 | 6                 | 3                 | <sup>4</sup><br>7 | <sup>2</sup><br>4 | <sup>2</sup><br>7 |                   |
| <sup>4</sup><br>5 | 7                 | 2                 | <sup>5</sup><br>8 | <sup>4</sup><br>5 | <sup>4</sup><br>5 | <sup>3</sup><br>8 | <sup>1</sup><br>6 | <sup>4</sup><br>8 | <sup>6</sup><br>4 | <sup>6</sup><br>9 |
| <sup>3</sup><br>4 | <sup>3</sup><br>4 | 6                 | <sup>2</sup><br>8 | 1                 | 7                 |                   | <sup>2</sup><br>4 | <sup>2</sup><br>8 | 5                 |                   |
| 1                 | <sup>2</sup><br>4 | <sup>4</sup><br>5 | 3                 | <sup>5</sup><br>7 | <sup>2</sup><br>8 | 9                 | <sup>4</sup><br>7 | <sup>6</sup><br>4 | <sup>2</sup><br>6 |                   |
| <sup>2</sup><br>4 | <sup>2</sup><br>4 | <sup>2</sup><br>5 | <sup>1</sup><br>7 | <sup>5</sup><br>9 | <sup>5</sup><br>7 | <sup>2</sup><br>9 | <sup>5</sup><br>6 | <sup>4</sup><br>7 | 8                 |                   |
| 6                 | <sup>2</sup><br>5 | 8                 | 4                 | <sup>5</sup><br>7 | <sup>2</sup><br>5 |                   | <sup>2</sup><br>5 | <sup>2</sup><br>7 | 1                 |                   |
| <sup>2</sup><br>4 | 6                 | <sup>4</sup><br>5 | <sup>5</sup><br>7 | <sup>4</sup><br>8 | <sup>4</sup><br>5 | <sup>3</sup><br>8 | <sup>1</sup><br>2 | <sup>1</sup><br>2 | <sup>2</sup><br>3 |                   |
| <sup>4</sup><br>7 | <sup>4</sup><br>8 | 1                 | <sup>5</sup><br>7 | <sup>6</sup><br>8 | <sup>2</sup><br>4 | <sup>5</sup><br>8 | <sup>6</sup><br>7 | <sup>6</sup><br>8 | <sup>3</sup><br>9 |                   |
| 9                 | <sup>2</sup><br>8 | 3                 | <sup>1</sup><br>7 | <sup>6</sup><br>8 | <sup>1</sup><br>8 | 4                 | 5                 | <sup>2</sup><br>6 |                   |                   |

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| <sup>1</sup><br>5 | <sup>1</sup><br>6 | <sup>3</sup><br>9 | 2                 | 4                 | <sup>5</sup><br>8 | <sup>3</sup><br>6 | <sup>3</sup><br>7 | <sup>1</sup><br>5 | <sup>1</sup><br>3 | <sup>1</sup><br>5 |
| <sup>1</sup><br>4 | <sup>1</sup><br>5 | <sup>3</sup><br>6 | 5                 | <sup>2</sup><br>7 | <sup>2</sup><br>5 | <sup>2</sup><br>6 | <sup>3</sup><br>5 | <sup>1</sup><br>5 | <sup>1</sup><br>2 | <sup>3</sup><br>8 |
| <sup>5</sup><br>9 | <sup>3</sup><br>7 | <sup>3</sup><br>9 | 8                 | <sup>2</sup><br>7 | <sup>2</sup><br>5 | <sup>2</sup><br>3 | 1                 | 6                 | 4                 | <sup>2</sup><br>5 |
| 1                 | 5                 | 4                 | <sup>1</sup><br>7 | <sup>1</sup><br>3 | <sup>1</sup><br>3 | <sup>3</sup><br>7 | 8                 | 2                 | 6                 |                   |
| <sup>1</sup><br>8 | <sup>1</sup><br>9 | <sup>1</sup><br>8 | <sup>3</sup><br>6 | <sup>1</sup><br>5 | <sup>4</sup><br>9 | <sup>5</sup><br>6 | 7                 | <sup>1</sup><br>3 | <sup>1</sup><br>3 | <sup>9</sup><br>9 |
| 7                 | <sup>1</sup><br>9 | <sup>2</sup><br>6 | <sup>3</sup><br>6 | 8                 | <sup>1</sup><br>2 | <sup>6</sup><br>9 | <sup>1</sup><br>4 | <sup>3</sup><br>9 | <sup>1</sup><br>4 | <sup>3</sup><br>9 |
| <sup>2</sup><br>4 | <sup>2</sup><br>8 | <sup>1</sup><br>6 | 7                 | <sup>4</sup><br>5 | <sup>3</sup><br>8 | <sup>2</sup><br>3 | <sup>5</sup><br>9 | <sup>3</sup><br>8 | <sup>2</sup><br>3 | <sup>5</sup><br>9 |
| 3                 | <sup>6</sup><br>8 | <sup>5</sup><br>7 | <sup>1</sup><br>5 | 9                 | 2                 | <sup>1</sup><br>4 | <sup>5</sup><br>8 | <sup>1</sup><br>6 | <sup>1</sup><br>4 | <sup>5</sup><br>7 |
| <sup>2</sup><br>4 | <sup>2</sup><br>8 | <sup>6</sup><br>9 | <sup>1</sup><br>5 | <sup>1</sup><br>3 | <sup>3</sup><br>4 | <sup>1</sup><br>2 | <sup>3</sup><br>5 | <sup>1</sup><br>3 | <sup>1</sup><br>2 | <sup>3</sup><br>5 |

|            |            |            |                |              |                  |
|------------|------------|------------|----------------|--------------|------------------|
| 1 2<br>7 9 | 1 2<br>7 9 | 1 2<br>7 9 | 8              | 5<br>4 7 9   | 6 3<br>4 7 9     |
| 3<br>7 8 9 | 4 5        | 2 3<br>7   | 2 3<br>7 9     | 6            | 2<br>7 8 9       |
| 3<br>7 8 9 | 6          | 1 2 3<br>7 | 1 2 3<br>4 7 9 | 4<br>7 9     | 2<br>4 7 9       |
| 2 5 6<br>8 | 3          | 2 6<br>8   | 4<br>7         | 6 5<br>8     | 9 4<br>7         |
| 4          | 7 1<br>6   | 9          | 1 6            | 2 5 3        | 8 5 3            |
| 1 5<br>8 9 | 1 5        | 1<br>8 9   | 1 3<br>4 7     | 1 3<br>4 7 8 | 4 5<br>7 8       |
| 1 2<br>5   | 9          | 1 2<br>4 7 | 6 4<br>7       | 3 2<br>4 7   | 8 4 5<br>7       |
| 2 5 6<br>7 | 8          | 2 6<br>4 7 | 4 5<br>7       | 2 4<br>7     | 1 5 3<br>9 4 5 7 |
| 2 5<br>7   | 2 5        | 3          | 2 4 5<br>7     | 8 9          | 8 9              |

|            |              |            |          |            |            |                  |
|------------|--------------|------------|----------|------------|------------|------------------|
| 1 3<br>5   | 1 2 3<br>5   | 1 2 3<br>5 | 4        | 1 5<br>7   | 1<br>7     | 6 8 9            |
| 4          | 1 5          | 6          | 1 3<br>5 | 8 9        | 2 7        | 1 3<br>5         |
|            |              | 9          | 1 3<br>5 | 2 6        | 1 4 5      | 1 3<br>5 4 5     |
| 2          | 9            | 1 5        | 1 5      | 6 8        | 3 4        | 7                |
| 6          | 1 3<br>5 7   | 4          | 9        | 1 5<br>7   | 1 3<br>7   | 8 1 5 6<br>2     |
| 6          | 1 3<br>7 8   | 1 3<br>5 7 | 2        | 1 4 5<br>7 | 1 3<br>4 7 | 1 5 6<br>9 1 5 6 |
| 1 3<br>9   | 1 2 3<br>4   | 8          | 7        | 1 4<br>9   | 5          | 1 2 3<br>4 6 9   |
| 1 5<br>9   | 6            | 1 2<br>5   | 8 3      | 1 2<br>4   | 7          | 1 2<br>5 4 5     |
| 1 3<br>5 9 | 1 2 3<br>4 5 | 7          | 6        | 1 4<br>9   | 1 2<br>4   | 1 2 3<br>4 5 9   |

|              |              |            |            |              |                |                  |              |        |
|--------------|--------------|------------|------------|--------------|----------------|------------------|--------------|--------|
| 2<br>8 9     | 5            | 6<br>9     | 3          | 2 6<br>8     | 7              | 1 2<br>8         | 4            | 1<br>8 |
| 1            | 2<br>4 7 8   | 4 6<br>7   | 2 4 5<br>9 | 2 5 6<br>8   | 4 5 6<br>8 9   | 3                | 6 5<br>9 7   |        |
| 2<br>4 7 8   | 3            | 4 6<br>7   | 1 2<br>4 5 | 2 5 6<br>8   | 1 4 5 6<br>8 9 | 2                | 6 5<br>9 7   |        |
| 5            | 4 7<br>9     | 8          | 4 7<br>9   | 3 4<br>9     | 6              | 1                | 2            |        |
| 2 3<br>4 7   | 1 2<br>4 7   | 1 3<br>4 7 | 8          | 2 6 4<br>7 6 | 5              | 3<br>7           | 9            |        |
| 2 3<br>7 9   | 6            | 3 7<br>9   | 2 5<br>7 9 | 1 5<br>9     | 4              | 3 8<br>7 8       |              | 3      |
| 3 1<br>7 8 9 | 1 3<br>7 8 9 | 5 7<br>9   | 5          | 4 5<br>8     | 1 3<br>8       | 2 6              |              |        |
| 4 3<br>8     | 1 4<br>8     | 1 3<br>4 5 | 6 9        | 2            | 7              | 3 1 3<br>5 8 4 8 |              |        |
| 6            | 1 4<br>7 8   | 2          | 1 5<br>7   | 5 8          | 1 3<br>5 8     | 9                | 3 1 3<br>4 8 |        |

|            |     |          |     |              |       |                |              |     |
|------------|-----|----------|-----|--------------|-------|----------------|--------------|-----|
| 1 4<br>8 9 | 2   | 1 4      | 5 3 | 3 9          | 7     | 5 8            | 4 5<br>8 9   | 6   |
|            | 3   | 5        | 6   | 4            | 1     | 2              | 8 9          | 7   |
| 4          | 6   | 7        | 8   | 2            | 5 9   | 4 5 3<br>4 5 9 |              | 1   |
| 1 2<br>5   | 4   | 1 2<br>8 | 5 3 | 3 6<br>9     | 5 8 9 | 7              | 1 2<br>4 6 4 | 2 9 |
| 1 2<br>5   | 4 8 | 3        | 7   | 6 5<br>9 8 9 |       | 1 2<br>4 6 4   | 1 2<br>6 4   | 2 9 |
| 6          | 7   | 9        | 4   | 1            | 2     | 5 3            | 5 3          | 8   |
| 3          | 1   | 2 6      | 9   | 7            | 4     | 2 8<br>6       | 2 8<br>6     | 5   |
| 2 4<br>8   | 9   | 8        | 1 2 | 5            | 6     | 1 2<br>4       | 7 3          |     |
| 7          | 5   | 4 2 6    | 1 2 | 8            | 3     | 9              | 1 2<br>4 6 4 | 2   |

|            |              |            |                |              |              |              |   |          |
|------------|--------------|------------|----------------|--------------|--------------|--------------|---|----------|
| 1 6<br>7 9 | 2            | 1 3<br>7 8 | 4              | 1 3<br>7 9   | 7 8 9        | 3 6<br>8     | 5 | 3 6<br>8 |
| 1<br>9     | 1 5<br>8 9   | 1 3<br>5 8 | 1 2 3<br>9     | 1 2 3<br>5 9 | 6            | 2 3<br>8     | 7 | 4        |
| 4          | 5 6<br>8     | 5 6<br>7 8 | 2 3<br>7       | 2 3<br>5 7 8 | 9            | 1 2 3<br>6 8 |   |          |
| 8          | 1 4 5 6<br>9 | 1 4 5 6    | 1 2<br>6 9     | 1 2<br>5 6 9 | 5            | 3 4<br>6 9 7 |   | 3        |
| 1 6<br>9   | 3            | 1 5 6      | 7              | 1 5 6<br>9   | 4            | 2 6<br>8     |   | 2        |
| 2          | 7 4 6        | 8          | 6 9            | 3            | 1 5 4<br>6 9 | 1 5          |   |          |
| 3 6<br>7   | 4 8          | 9          | 5 4<br>7 8     | 1 3<br>6     | 2 7          | 6            |   |          |
| 5          | 1 4<br>8     | 1 6<br>7 8 | 6 4<br>9 7 8 9 | 2 1<br>4 7   | 3            | 1 9          |   |          |
| 1 3<br>7   | 1 6<br>4     | 2          | 3 6<br>9 7     | 3 7 9        | 1 4 5 6<br>8 | 1 5 9        |   |          |

|   |          |          |          |          |          |            |          |   |
|---|----------|----------|----------|----------|----------|------------|----------|---|
| 1 | 2        | 3        | 4        | 7 5<br>7 | 5 7      | 8 6<br>7   | 8 6<br>7 | 9 |
| 4 | 5        | 6        | 1        | 8        | 9        | 2 7        | 2 7      | 3 |
| 7 | 8 9      | 8 9      | 3        | 6        | 2        | 4          | 5        | 1 |
| 2 | 4        | 1 7<br>9 | 5 7      | 1 5<br>7 | 6        | 3 7<br>9   |          | 8 |
| 3 | 1 7<br>8 | 1 7<br>8 | 9        | 4 7      |          | 5 2 6      | 2 6      |   |
| 6 | 7 9      | 5        | 2        | 3        | 8        | 7 9        | 1        | 4 |
| 5 | 1 3<br>7 | 1 7      | 6 8<br>9 | 2 9 7    | 1 3      | 2 6<br>8 9 | 4 2 6    |   |
| 8 | 1 3<br>7 | 2 7      | 6 7<br>9 | 1 4<br>7 | 4        | 1 6<br>9   | 3 6<br>9 | 5 |
| 9 | 6        | 4        | 5 8      | 1 2<br>5 | 1 3<br>5 | 1 2<br>8   | 2 3<br>8 | 7 |

|                  |                 |            |               |                   |          |                   |              |
|------------------|-----------------|------------|---------------|-------------------|----------|-------------------|--------------|
| 1<br>3<br>6<br>9 | 2               | 5 6<br>9   | 5 6<br>8 9    | 1 3<br>5 6<br>8 9 | 4        | 1 5<br>3<br>7 8 9 | 5 3<br>8 9   |
| 7                | 1 3<br>9        | 5<br>9     | 2<br>5<br>8 9 | 1 2 3<br>5<br>8 9 | 4        | 1 2<br>5<br>8 9   | 6            |
| 1 3<br>4 6<br>9  | 1 3<br>4 6<br>9 | 8          | 2<br>5 6<br>9 | 1 2 3<br>5<br>9   | 7        | 1 2<br>5<br>9     | 3<br>5<br>9  |
| 1 2<br>6<br>7    | 1<br>6          | 3          | 4             | 2<br>5<br>7       | 8        | 9                 | 1 5 6<br>7 5 |
| 1<br>8 9         | 1<br>7 8 9      | 6<br>7 9   | 5 6<br>7 9    | 5 3<br>7 9        | 3<br>5 6 | 1 5 6<br>7 8      | 4 2          |
| 2<br>6<br>8 9    | 5               | 4          | 1             | 2<br>7 9          | 2<br>6   | 3<br>7 8          | 3<br>7 8     |
| 3<br>4 8         | 3<br>4 8        | 1 2<br>7   | 2<br>7 8      | 5<br>7 8          | 6        | 1 2<br>5<br>7     | 4 5<br>9     |
| 5                | 4<br>8          | 1 2<br>7 6 | 2<br>7 8      | 1 2<br>7 8        | 9        | 3                 | 2 6<br>4 7   |
| 6<br>9           | 6<br>7 9        | 2<br>7 9   | 3             | 4                 | 2<br>5   | 2 5 6<br>7        | 8 1          |

|                   |          |                   |               |                   |               |                   |                 |
|-------------------|----------|-------------------|---------------|-------------------|---------------|-------------------|-----------------|
| 5<br>7            | 4<br>2   | 8                 | 3             | 9                 | 4<br>2        | 1                 | 6<br>7 5 6      |
| 1 3<br>9          | 6        | 1 3<br>7 9        | 5             | 1 4<br>7 8        | 1 4<br>8      | 2                 | 3<br>8          |
| 1 3<br>4 5<br>9   | 1 2<br>4 | 1 2 3<br>5<br>7 9 | 2<br>4        | 1 2<br>4          | 6<br>7 8      | 3<br>4 5<br>7 8 9 | 3<br>5<br>8     |
| 6<br>8 9          | 3        | 2<br>6<br>9       | 1             | 4<br>6<br>8       | 7             | 4 6<br>8          | 5<br>8          |
| 1<br>5 6<br>8     | 1 2<br>8 | 1 2 5<br>6<br>7   | 2<br>4        | 2 6<br>8          | 3             | 4 5<br>7 8        | 9               |
| 1 5 6<br>7 8      | 1 2<br>8 | 4                 | 2<br>6<br>8 9 | 2 5<br>6<br>8 9   | 2<br>5<br>8 9 | 3                 | 1 2<br>6<br>7 8 |
| 1 3<br>4 6<br>8 9 | 5        | 1 3<br>6<br>9     | 4 6<br>8 9    | 4 6<br>8          | 4             | 2                 | 1 3<br>6<br>7 9 |
| 1 4<br>6<br>9     | 7        | 1<br>6<br>9       | 2<br>4<br>9   | 1 2<br>4 5 6<br>9 | 3             | 5 6<br>9          | 8<br>1 5 6      |
| 2                 | 1<br>8 9 | 1 3<br>9          | 7             | 1 5 6<br>8        | 1 5<br>8 9    | 5 6<br>9          | 1 3<br>6<br>9   |

|                 |               |               |                 |                 |              |               |                 |                   |
|-----------------|---------------|---------------|-----------------|-----------------|--------------|---------------|-----------------|-------------------|
| 1<br>4 5<br>8   | 1<br>5<br>8   | 6             | 2<br>4 7<br>8   | 2<br>4 7<br>8   | 3            | 2<br>4 5<br>9 | 2<br>4 5<br>9   | 2<br>4<br>7       |
| 4<br>8          | 9             | 7             | 2<br>4 6<br>8   | 2<br>4 6<br>8   | 5            | 1             | 3               | 4 2<br>6          |
| 4 5<br>3        | 2             | 5<br>3        | 4 6<br>7        | 9               | 1            | 4 5 6         | 8               | 4 6<br>7          |
| 2 3<br>5<br>8 9 | 5<br>8        | 3<br>8 9      | 1 2<br>4 6<br>9 | 2 3<br>4 5 6    | 2            | 2 3<br>4 5 6  | 7               | 1 2 3<br>4 8<br>6 |
| 6               | 5<br>7 8      | 3<br>8 9      | 2 3<br>4 7      | 1 2<br>4 5<br>9 | 2 3<br>7 8 9 | 2             | 2 3<br>4 5      | 1 2 3<br>4 8      |
| 2 3<br>5<br>7 8 | 4             | 1             | 2<br>6<br>7     | 2 3<br>5 6      | 2            | 2 3<br>5 6    | 9               |                   |
| 1 2 3<br>7 9    | 1 3<br>6<br>7 | 2 3<br>9      | 5               | 2<br>7          | 2<br>7 9     | 8             | 1 2<br>4 6<br>9 | 1 2 3<br>4 6      |
| 1 2<br>5<br>8 9 | 1<br>5 6<br>8 | 2<br>5<br>8 9 | 3               | 2<br>8          | 4            | 7             | 1 2<br>6<br>9   | 1 2<br>6          |
| 2 3<br>7 8 9    | 3<br>7 8      | 4             | 2<br>7 8 9      | 1               | 6            | 2 3<br>9      | 2               | 5                 |

|               |                   |               |              |             |              |               |            |                 |
|---------------|-------------------|---------------|--------------|-------------|--------------|---------------|------------|-----------------|
| 1             | 2 3<br>5<br>8     | 2 3<br>5      | 2 5 6<br>7 8 | 5 3<br>7 8  | 3<br>7 8     | 9             | 4 5 6<br>8 | 2<br>4 5 6      |
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| 3             | 1 2<br>4          | 8             | 9            | 1<br>7      | 2<br>6       | 5 4<br>6<br>7 | 1 4<br>6   | 1 4<br>6        |
| 5 6<br>9      | 1<br>5<br>9       | 7             | 4            | 1<br>5<br>8 | 5 6<br>8     | 1 3<br>6<br>8 | 2<br>8     | 1 3<br>6        |
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| 5 6<br>8 9    | 5 3<br>8 9        | 5 6<br>9      | 5 7 8        | 5 3<br>7 8  | 4            | 2 6<br>8      | 1          | 2 5 6<br>8      |
| 7             | 4 5<br>8          | 5 6           | 1            | 2           | 9            | 4 6<br>8      | 3          | 4 5 6<br>8      |

|        |                 |                 |               |          |            |                 |                  |          |
|--------|-----------------|-----------------|---------------|----------|------------|-----------------|------------------|----------|
| 1<br>4 | 2               | 3               | 7             | 5        | 9          | 1<br>4<br>8     | 1<br>4<br>8      | 6        |
| 8      | 7               | 1<br>4          | 2             | 6        | 1 3<br>4   | 5               | 9                | 1 3<br>4 |
| 9      | 5 6             | 5 6             | 1 3<br>8      | 1 3<br>8 | 1 3<br>4 8 | 7               | 2                | 1 3<br>4 |
| 2<br>6 | 1 5 6<br>8      | 1 2 5 6<br>8    | 1 5 3<br>8    | 4        | 1 3<br>8   | 9               | 7                | 1 5<br>8 |
| 3      | 1 4 5<br>9      | 7               | 1 5<br>8      | 9        | 6          | 1 4<br>8        | 1 4 5<br>8       | 2        |
| 1<br>4 | 1 4 5<br>9      | 1 4 5<br>8 9    | 1 5<br>8      | 2        | 7          | 3<br>6          | 3 1<br>6 4 5 8   |          |
| 5      | 1 3<br>6<br>9   | 1 2<br>6<br>9   | 4             | 7        | 1 3<br>8   | 1 2 3<br>6<br>8 | 1 3<br>6<br>8 9  |          |
| 6<br>7 | 1 3<br>4 6<br>9 | 1 6<br>9        | 1 3<br>6<br>9 | 2        | 1 3<br>8   | 1 3<br>4 6<br>8 | 1 4 5<br>6 7 8 9 |          |
| 2<br>7 | 8               | 1 2<br>4 6<br>9 | 6<br>9        | 1 3<br>8 | 5          | 1 2 3<br>4 6    | 1 3<br>6 4       | 1<br>7 9 |

|              |                 |                 |          |              |                |              |                |            |        |
|--------------|-----------------|-----------------|----------|--------------|----------------|--------------|----------------|------------|--------|
| 4 5<br>7 8   | 4 5<br>7 8      | 3<br>6          | 1        | 3<br>4 7     | 6              | 2            | 3<br>7 8       | 9          | 3<br>7 |
| 4 6<br>7 8   | 4 6<br>7 8      | 3<br>6          | 9        | 1 3<br>4 7   | 1 4<br>7 8     | 1 4<br>7 8   | 2 3<br>8       | 2 3<br>6   | 5      |
| 2            | 3<br>7 8        | 3<br>6          | 3<br>8   | 3<br>7 9     | 5 7 8 9        | 5 7 8 9      | 4              | 3<br>6     | 1      |
| 4 5<br>7     | 2 3<br>4 5<br>7 | 2 3<br>4 5      | 8        | 4<br>7 9     | 4<br>7 9       | 1 4 5<br>6   | 1 2 3<br>8     | 2 3<br>4   | 6      |
| 4 6<br>8     | 9               | 2 3<br>4 6<br>8 | 5        | 1<br>4       | 1<br>4         | 2 3<br>8     | 7              | 2 3<br>4   |        |
| 1            | 4 5 6<br>7 8    | 4 5 6<br>8      | 2        | 3<br>4 7     | 3<br>4 7       | 5 4 5<br>8 9 | 4 5<br>8       | 4<br>9     |        |
| 4 5<br>9     | 2<br>4 5        | 7               | 6        | 1 4 5<br>9   | 1 4 5<br>9     | 2 3<br>5 9   | 1 2 3<br>4 5   | 8          |        |
| 3            | 4 5<br>8        | 4 5<br>8        | 1<br>4 7 | 2<br>9       | 1 4 5<br>7 8 9 | 6            | 1 4 5<br>7 8 9 | 4<br>9     |        |
| 4 5 6<br>8 9 | 1<br>4 5 6<br>8 | 2<br>4 7        | 4        | 4 5<br>7 8 9 | 3              | 2 5<br>7 9   | 2 4 5<br>7 9   | 2<br>4 7 9 |        |

|                                 |                                 |                                 |                                 |                                 |                                 |                               |                                 |                                 |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|
| 3                               | 8                               | 5                               | 6                               | <sup>2</sup> <sub>4 7</sub>     | 1                               | <sup>2</sup> <sub>4 7</sub>   | <sup>2</sup> <sub>4 7 9</sub>   | <sup>4</sup> <sub>7 9</sub>     |
| 1                               | <sup>4 6</sup> <sub>7</sub>     | 9                               | 5                               | <sup>2</sup> <sub>4 7 8</sub>   | <sup>2</sup> <sub>4 8</sub>     | <sup>3</sup> <sub>6 4 7</sub> | <sup>2</sup> <sub>8</sub>       | <sup>3</sup> <sub>6</sub>       |
| <sup>4 6</sup> <sub>7</sub>     | 2                               | <sup>4 6</sup> <sub>7 8 9</sub> | 3                               | <sup>4</sup> <sub>8 9</sub>     | 5                               | 1                             | <sup>6</sup> <sub>8</sub>       |                                 |
| <sup>4 6</sup> <sub>7 8 9</sub> | <sup>4 6</sup> <sub>7 9</sub>   | <sup>1 2</sup> <sub>4 8</sub>   | <sup>2 3</sup> <sub>7 8 9</sub> | <sup>2</sup> <sub>6 7 8 9</sub> | 5                               | <sup>4</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>4 7 9</sub>   | <sup>1 3</sup> <sub>7 8 9</sub> |
| <sup>4 5</sup> <sub>7 8 9</sub> | 3                               | <sup>2</sup> <sub>4 8</sub>     | <sup>2</sup> <sub>7 8 9</sub>   | 1                               | <sup>2</sup> <sub>8 9</sub>     | <sup>4</sup> <sub>7 8</sub>   | 6                               | <sup>4 5</sup> <sub>7 8 9</sub> |
| <sup>5 6</sup> <sub>7 8 9</sub> | <sup>1 2</sup> <sub>5 6 8</sub> | 4                               | <sup>2</sup> <sub>7 8 9</sub>   | <sup>2 3</sup> <sub>6 8 9</sub> | <sup>2 3</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>5 7 9</sub> | <sup>1 3</sup> <sub>5 8 9</sub> |                                 |
| <sup>2</sup> <sub>9</sub>       | 1                               | 7                               | <sup>2 3</sup> <sub>9</sub>     | 5                               | <sup>2 3</sup> <sub>4 6 9</sub> | 8                             | <sup>4 6</sup> <sub>4 6</sub>   |                                 |
| <sup>2</sup> <sub>4 6 8</sub>   | <sup>4 6</sup> <sub>4 6</sub>   | 3                               | 1                               | <sup>4 6</sup> <sub>4 8</sub>   | <sup>4 6</sup> <sub>4 8</sub>   | 9                             | <sup>5</sup> <sub>7 7</sub>     | <sup>5</sup> <sub>7</sub>       |
| <sup>4 5 6</sup> <sub>8 9</sub> | <sup>4 5 6</sup> <sub>9</sub>   | <sup>4 6</sup> <sub>4 8</sub>   |                                 | <sup>4 6</sup> <sub>8 9</sub>   | 7                               | 1                             | 3                               | 2                               |

|                                 |                               |                             |                                   |                               |                               |                                 |                                 |                                   |
|---------------------------------|-------------------------------|-----------------------------|-----------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-----------------------------------|
| 4                               | 9                             | 2                           | <sup>1</sup> <sub>8</sub>         | 6                             | 7                             | <sup>1</sup> <sub>8</sub>       | 5                               | 3                                 |
| <sup>5</sup> <sub>8</sub>       | <sup>5</sup> <sub>8</sub>     | <sup>5</sup> <sub>8</sub>   | <sup>1</sup> <sub>4 9</sub>       | <sup>1</sup> <sub>4</sub>     | <sup>1 2</sup> <sub>9</sub>   | <sup>1</sup> <sub>6 9</sub>     | 7                               | <sup>1 2</sup> <sub>4 6 9</sub>   |
| 1                               | 7                             | 6                           | <sup>4 5</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>4 5 8</sub> | <sup>2 3</sup> <sub>9</sub>   | <sup>2</sup> <sub>4 9</sub>     | <sup>2</sup> <sub>4 8 9</sub>   |                                   |
| <sup>3</sup> <sub>5 6 8</sub>   | <sup>4 5 6</sup> <sub>8</sub> | 1                           | <sup>3</sup> <sub>8 9</sub>       | <sup>3</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>6 9</sub>   | 2                               | <sup>4</sup> <sub>6 9</sub>     | <sup>4 5 6</sup> <sub>7 9</sub>   |
| 9                               | <sup>2</sup> <sub>5 6 8</sub> | <sup>5</sup> <sub>8</sub>   | <sup>3</sup> <sub>2 3 6 7 8</sub> | 4                             | <sup>3</sup> <sub>5 6 7</sub> | 1                               | <sup>5 6</sup> <sub>7</sub>     | <sup>5 6</sup> <sub>5 6</sub>     |
| <sup>3</sup> <sub>6 4</sub>     | <sup>2</sup> <sub>6</sub>     | 7                           | <sup>1 2 3</sup> <sub>6 9</sub>   | <sup>1</sup> <sub>3</sub>     | 5                             | <sup>3</sup> <sub>6 9</sub>     | 8                               | <sup>4 6</sup> <sub>9</sub>       |
| <sup>2</sup> <sub>5 6</sub>     | 3                             | <sup>4 5</sup> <sub>9</sub> | 7                                 | <sup>1</sup> <sub>4 5</sub>   | 8                             | <sup>1</sup> <sub>5 6 9</sub>   | <sup>2</sup> <sub>6 9</sub>     | <sup>1 2</sup> <sub>5 6 9</sub>   |
| <sup>2</sup> <sub>5 6 7 8</sub> | 1                             | <sup>4 5</sup> <sub>8</sub> | <sup>3</sup> <sub>4 5 6</sub>     | 9                             | <sup>3</sup> <sub>6</sub>     | <sup>3</sup> <sub>5 6 7 8</sub> | <sup>2 3</sup> <sub>6 7 8</sub> | <sup>2</sup> <sub>5 6</sub>       |
| <sup>5 6</sup> <sub>7 8</sub>   | <sup>5 6</sup> <sub>8</sub>   | <sup>5</sup> <sub>8 9</sub> | <sup>1</sup> <sub>5 6</sub>       | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>3</sub>     | 4                               | <sup>3</sup> <sub>6 9</sub>     | <sup>1</sup> <sub>5 6 7 8 9</sub> |

|   |                               |                               |                           |                             |                             |                               |                               |                           |
|---|-------------------------------|-------------------------------|---------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------|
| 1 | 2                             | 3                             | 4                         | <sup>5</sup> <sub>7</sub>   | <sup>5</sup> <sub>7</sub>   | <sup>6</sup> <sub>8</sub>     | <sup>6</sup> <sub>8</sub>     | 9                         |
| 4 | 5                             | 6                             | 1                         | 8                           | 9                           | <sup>2</sup> <sub>7</sub>     | <sup>2</sup> <sub>7</sub>     | 3                         |
| 7 | <sup>8 9</sup> <sub>8 9</sub> | 3                             | 6                         | 2                           | 4                           | 5                             | 1                             |                           |
| 2 | <sup>1</sup> <sub>4 7 9</sub> | <sup>1</sup> <sub>4 7 9</sub> | <sup>5</sup> <sub>7</sub> | <sup>1</sup> <sub>5 7</sub> | 6                           | 3                             | <sup>7 9</sup> <sub>7 9</sub> | 8                         |
| 3 | <sup>1</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>7 8</sub>   | 9                         | 4                           | <sup>1</sup> <sub>7</sub>   | 5                             | <sup>2</sup> <sub>6</sub>     | <sup>2</sup> <sub>6</sub> |
| 6 | <sup>7 9</sup> <sub>7 9</sub> | 5                             | 2                         | 3                           | 8                           | <sup>7 9</sup> <sub>7 9</sub> | 1                             | 4                         |
| 5 | <sup>1</sup> <sub>7</sub>     | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>9</sub>   | <sup>1</sup> <sub>3</sub>   | <sup>2</sup> <sub>8 9</sub>   | 4                             | <sup>2</sup> <sub>6</sub> |
| 8 | <sup>1</sup> <sub>4 7</sub>   | <sup>3</sup> <sub>7</sub>     | 2                         | <sup>1</sup> <sub>7 9</sub> | <sup>4</sup> <sub>7</sub>   | <sup>3</sup> <sub>9</sub>     | <sup>1</sup> <sub>6 9</sub>   | 5                         |
| 9 | 6                             | <sup>1</sup> <sub>4</sub>     | <sup>5</sup> <sub>8</sub> | <sup>1 2</sup> <sub>5</sub> | <sup>1</sup> <sub>4 5</sub> | <sup>1 2</sup> <sub>8</sub>   | <sup>2 3</sup> <sub>8</sub>   | 7                         |

|                                 |                             |                               |                               |                               |                               |                                 |                               |                               |
|---------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|
| <sup>1</sup> <sub>8</sub>       | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>8</sub>     | 5                             | 2                             | <sup>1</sup> <sub>8</sub>       | <sup>7 9</sup> <sub>7 9</sub> | 4                             |
| <sup>1</sup> <sub>8</sub>       | 4                           | 2                             | 3                             | <sup>7 9</sup> <sub>7 9</sub> | <sup>7 9</sup> <sub>7 9</sub> | 5                               | <sup>1</sup> <sub>8</sub>     | 6                             |
| 9                               | 7                           | 5                             | <sup>4 6</sup> <sub>4 8</sub> | <sup>4 6</sup> <sub>8</sub>   | <sup>1</sup> <sub>6 8</sub>   | <sup>3</sup> <sub>8</sub>       | <sup>1</sup> <sub>3</sub>     | <sup>3</sup> <sub>8</sub>     |
| <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>6 9</sub>   | 4                             | 8                             | <sup>6</sup> <sub>7 9</sub>   | 2                               | <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>5 7 9</sub> |
| 2                               | 5                           | <sup>7 9</sup> <sub>7 9</sub> | 1                             | <sup>4 6</sup> <sub>7 9</sub> | <sup>6</sup> <sub>7 9</sub>   | <sup>4 6</sup> <sub>7 8 9</sub> | 3                             | <sup>4</sup> <sub>7 8 9</sub> |
| <sup>1</sup> <sub>7</sub>       | <sup>6</sup> <sub>7 9</sub> | <sup>1</sup> <sub>7 9</sub>   | <sup>6</sup> <sub>4 7 9</sub> | <sup>3</sup> <sub>5</sub>     | <sup>2</sup> <sub>4 6</sub>   | <sup>1</sup> <sub>6 7 9</sub>   | <sup>1 2</sup> <sub>4 9</sub> |                               |
| <sup>5 6</sup> <sub>8</sub>     | <sup>6</sup> <sub>9</sub>   | <sup>6</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>6 9</sub>   | 1                             | 4                             | <sup>2 3</sup> <sub>8</sub>     | 7                             | <sup>2 3</sup> <sub>5 8</sub> |
| <sup>4 6</sup> <sub>7 8</sub>   | 1                           | 3                             | <sup>2</sup> <sub>7</sub>     | 5                             | <sup>6</sup> <sub>7 8</sub>   | <sup>4</sup> <sub>8</sub>       | 9                             | <sup>2</sup> <sub>4 8</sub>   |
| <sup>4 5 6</sup> <sub>7 8</sub> | 2                           | <sup>6</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 8 9</sub> | 3                             | 1                               | <sup>5 6</sup> <sub>8</sub>   | <sup>4 5</sup> <sub>8</sub>   |

|                             |                                 |                               |                                 |                                 |                                 |                                 |                                   |                                   |
|-----------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------------|-----------------------------------|
| 6                           | <sup>1 2</sup> <sub>4 5 7</sub> | <sup>1</sup> <sub>4 5 7</sub> | <sup>4</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>4 7</sub>     | 3                               | 8                               | <sup>1 2</sup> <sub>5 9</sub>     | <sup>1 2</sup> <sub>4</sub>       |
| <sup>4 5</sup> <sub>8</sub> | <sup>1</sup> <sub>4 5</sub>     | <sup>3</sup> <sub>4 5 8</sub> | <sup>1</sup> <sub>8 9</sub>     | 2                               | <sup>1</sup> <sub>4 6 8 9</sub> | <sup>1</sup> <sub>4 5 6 9</sub> | <sup>3</sup> <sub>5 6 9</sub>     | 7                                 |
| <sup>2</sup> <sub>4 8</sub> | <sup>1 2 3</sup> <sub>4 7</sub> | 9                             | 5                               | <sup>1</sup> <sub>4 7</sub>     | <sup>1</sup> <sub>4 6 7 8</sub> | <sup>1</sup> <sub>4 6</sub>     | <sup>1 2 3</sup> <sub>6 4 6</sub> | <sup>1 2 3</sup> <sub>6 4 6</sub> |
| 9                           | 6                               | <sup>4 5</sup> <sub>3</sub>   | 1                               | 8                               | <sup>4</sup> <sub>7</sub>       | <sup>5</sup> <sub>7</sub>       | <sup>2 3</sup> <sub>5</sub>       | <sup>2 3</sup> <sub>2 3</sub>     |
| 7                           | <sup>1 2 3</sup> <sub>4 5</sub> | <sup>1</sup> <sub>4 5</sub>   | <sup>2 3</sup> <sub>4</sub>     | <sup>3</sup> <sub>4 5 6 9</sub> | <sup>2</sup> <sub>4 6</sub>     | <sup>1</sup> <sub>5 6</sub>     | <sup>1 2 3</sup> <sub>5 6 8</sub> | <sup>1 2 3</sup> <sub>6</sub>     |
| <sup>2</sup> <sub>5</sub>   | 8                               | <sup>1</sup> <sub>5</sub>     | <sup>2 3</sup> <sub>7</sub>     | <sup>3</sup> <sub>5 6 7</sub>   | <sup>2</sup> <sub>6</sub>       | <sup>1</sup> <sub>5 6</sub>     | 4                                 | 9                                 |
| <sup>4 5</sup> <sub>8</sub> | <sup>4 5</sup> <sub>7 9</sub>   | 6                             | <sup>2 3</sup> <sub>4 7 8</sub> | <sup>1</sup> <sub>4 7</sub>     | <sup>1 2</sup> <sub>4 7 8</sub> | <sup>3</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>4 8</sub>       | <sup>3</sup> <sub>8</sub>         |
| 3                           | <sup>4</sup> <sub>7</sub>       | 2                             | <sup>4</sup> <sub>7 8</sub>     | 9                               | 5                               | <sup>1</sup> <sub>4 7</sub>     | <sup>1</sup> <sub>6 7 8</sub>     | <sup>1</sup> <sub>4 8</sub>       |
| 1                           | <sup>4</sup> <sub>7 9</sub>     | <sup>4</sup> <sub>7 8</sub>   | 6                               | <sup>4</sup> <sub>7</sub>       | <sup>3</sup> <sub>4 7 8</sub>   | 2                               | <sup>3</sup> <sub>7 8 9</sub>     | 5                                 |

|                               |                                 |                                 |                                 |                                   |                                 |                                   |                                 |                               |
|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|-----------------------------------|---------------------------------|-------------------------------|
| 1                             | 6                               | <sup>2</sup> <sub>4 5 7 8</sub> | <sup>2 3</sup> <sub>4 7 9</sub> | <sup>2 3</sup> <sub>4 7</sub>     | <sup>3</sup> <sub>4 5 7 9</sub> | <sup>2 3</sup> <sub>4 8 9</sub>   | <sup>2</sup> <sub>8 9</sub>     | <sup>2 3</sup> <sub>9</sub>   |
| <sup>4</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>4 7</sub>     | 3                               | <sup>2</sup> <sub>4 6 9 7</sub> | <sup>2</sup> <sub>4 6</sub>       | 1                               | 5                                 | <sup>2</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>9</sub>     |
| <sup>4 5</sup> <sub>4 8</sub> | 9                               | <sup>4 5</sup> <sub>4 5</sub>   | 8                               | <sup>2 3</sup> <sub>4 6 5 6</sub> | <sup>3</sup> <sub>4 6</sub>     | 7                                 | 1                               |                               |
| 6                             | <sup>1</sup> <sub>4 5 7</sub>   | <sup>4 5</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>4</sub>       | <sup>1</sup> <sub>4 8</sub>       | 2                               | <sup>1</sup> <sub>7 9</sub>       | 3                               | <sup>5</sup> <sub>7 9</sub>   |
| <sup>3</sup> <sub>8 9</sub>   | <sup>1 2 3</sup> <sub>4 5</sub> | <sup>2</sup> <sub>8 9</sub>     | 7                               | 5                                 | <sup>3</sup> <sub>6 8</sub>     | <sup>1 2</sup> <sub>6 9</sub>     | <sup>1 2</sup> <sub>6 9</sub>   | 4                             |
| <sup>4 5</sup> <sub>7</sub>   | <sup>3</sup> <sub>4 5 7</sub>   | <sup>2</sup> <sub>4 5 7</sub>   | <sup>1</sup> <sub>4 6</sub>     | <sup>3</sup> <sub>4 6</sub>       | <sup>1 2</sup> <sub>6 7</sub>   | <sup>1 2</sup> <sub>5 6</sub>     | 8                               |                               |
| 2                             | <sup>4 5</sup> <sub>7</sub>     | <sup>3</sup> <sub>4 5</sub>     | 1                               | <sup>3</sup> <sub>4 7 8</sub>     | <sup>3</sup> <sub>7 8 9</sub>   | <sup>3</sup> <sub>7 8 9</sub>     | <sup>5</sup> <sub>8 9</sub>     | 6                             |
| <sup>4 5</sup> <sub>7 9</sub> | <sup>3</sup> <sub>4 5 7</sub>   | 6                               | <sup>1 2 3</sup> <sub>4 9</sub> | <sup>1 2 3</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7 8 9</sub>   | <sup>1 2 3</sup> <sub>7 8 9</sub> | <sup>1 2</sup> <sub>5 8 9</sub> | <sup>2 3</sup> <sub>7 9</sub> |
| <sup>3</sup> <sub>7 9</sub>   | 8                               | <sup>5</sup> <sub>7 9</sub>     | 5                               | <sup>1 2 3</sup> <sub>7 6</sub>   | <sup>3</sup> <sub>7 9</sub>     | <sup>1 2 3</sup> <sub>7 9</sub>   | 4                               | <sup>2 3</sup> <sub>7 9</sub> |

|                             |                             |                                 |                                 |                                 |                               |                             |                               |                             |
|-----------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|
| 1                           | 2                           | <sup>3</sup> <sub>7 5 6</sub>   | <sup>4 5 6</sup> <sub>7</sub>   | <sup>4 5</sup> <sub>7 9</sub>   | <sup>6</sup> <sub>7 9</sub>   | 6                           | 8                             | <sup>3</sup> <sub>9</sub>   |
| 4                           | <sup>3</sup> <sub>5 8</sub> | <sup>3</sup> <sub>7 5 6</sub>   | <sup>1</sup> <sub>7 5 6</sub>   | <sup>1 5</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>7 6</sub> | <sup>3</sup> <sub>9</sub>     | 2                           |
| <sup>6</sup> <sub>7 8</sub> | 6                           | 9                               | <sup>1</sup> <sub>7 8</sub>     | 3                               | <sup>5</sup> <sub>4 7</sub>   | <sup>1</sup> <sub>4 7</sub> | <sup>4</sup> <sub>6</sub>     |                             |
| <sup>2 3</sup> <sub>5</sub> | <sup>3</sup> <sub>4 5</sub> | <sup>2 3</sup> <sub>4 5 6</sub> | 9                               | <sup>5</sup> <sub>7</sub>       | 8                             | <sup>1</sup> <sub>7 6</sub> | <sup>3</sup> <sub>4 7</sub>   | <sup>4</sup> <sub>3</sub>   |
| <sup>3</sup> <sub>8 9</sub> | 7                           | <sup>4</sup> <sub>3</sub>       | <sup>1</sup> <sub>6</sub>       | 2                               | <sup>1</sup> <sub>6</sub>     | <sup>4</sup> <sub>3</sub>   | <sup>5</sup> <sub>4 8 9</sub> | <sup>3</sup> <sub>6</sub>   |
| <sup>3</sup> <sub>5 6</sub> | <sup>3</sup> <sub>5 6</sub> | 1                               | <sup>5</sup> <sub>7</sub>       | <sup>5</sup> <sub>7</sub>       | 4                             | 2                           | <sup>3</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>8 9</sub> |
| <sup>2 3</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>4</sub>       | <sup>2 3</sup> <sub>1 4</sub>   | 6                               | 5                             | <sup>4</sup> <sub>8 9</sub> | <sup>2 3</sup> <sub>4 9</sub> | 7                           |
| <sup>2 3</sup> <sub>5</sub> | <sup>4</sup> <sub>5</sub>   | <sup>4</sup> <sub>5</sub>       | <sup>2 3</sup> <sub>4 7 8</sub> | <sup>4</sup> <sub>7 8</sub>     | <sup>2</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>8 9</sub> | 6                             | 1                           |
| <sup>2</sup> <sub>7 9</sub> | <sup>1</sup> <sub>4</sub>   | <sup>6</sup> <sub>9</sub>       | 8                               | <sup>3</sup> <sub>1 4</sub>     | <sup>1 2</sup> <sub>7 9</sub> | <sup>4</sup> <sub>9</sub>   | <sup>2</sup> <sub>9</sub>     | 5                           |

|                             |                               |                             |                                 |                                 |                                 |                               |                                 |                               |
|-----------------------------|-------------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|
| <sup>1</sup> <sub>5</sub>   | <sup>3</sup> <sub>1 5</sub>   | <sup>2</sup> <sub>4 7</sub> | 9                               | <sup>2 3</sup> <sub>4 7</sub>   | <sup>1 2</sup> <sub>4 7</sub>   | <sup>2 3</sup> <sub>7</sub>   | 8                               | 6                             |
| <sup>1</sup> <sub>8 9</sub> | <sup>3</sup> <sub>6 4</sub>   | <sup>2</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub>4 7 8</sub> | <sup>2 3</sup> <sub>4 7 8</sub> | <sup>1 2</sup> <sub>4 6</sub>   | <sup>2 3</sup> <sub>7 9</sub> | 5                               | <sup>2 3</sup> <sub>7 9</sub> |
| <sup>3</sup> <sub>8 9</sub> | <sup>3</sup> <sub>6 4</sub>   | <sup>2</sup> <sub>7 8</sub> | <sup>2</sup> <sub>4 7 8</sub>   | 5                               | <sup>2</sup> <sub>4 6</sub>     | <sup>2 3</sup> <sub>7 9</sub> | <sup>2 3</sup> <sub>4</sub>     | 1                             |
| <sup>1</sup> <sub>5 9</sub> | 2                             | 6                           | <sup>1</sup> <sub>7 8</sub>     | <sup>2</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>7 8 9</sub>   | <sup>3</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>5</sub>       | 4                             |
| 7                           | <sup>1</sup> <sub>3</sub>     | 8                           | <sup>5</sup> <sub>4</sub>       | <sup>2</sup> <sub>1 2</sub>     | <sup>1 2</sup> <sub>4</sub>     | 6                             | 9                               | <sup>2 3</sup> <sub>2 3</sub> |
| 4                           | <sup>1</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>5 9</sub> | 3                               | 6                               | <sup>1 2</sup> <sub>7 8 9</sub> | <sup>2</sup> <sub>7 8</sub>   | <sup>1 2</sup> <sub>5</sub>     | <sup>2</sup> <sub>5 7 8</sub> |
| 2                           | <sup>1</sup> <sub>5 8 9</sub> | <sup>1</sup> <sub>5 9</sub> | <sup>4</sup> <sub>7</sub>       | <sup>4</sup> <sub>7</sub>       | 3                               | <sup>1</sup> <sub>8 9</sub>   | 6                               | <sup>5</sup> <sub>8 9</sub>   |
| <sup>1</sup> <sub>5 8</sub> | 4                             | <sup>1</sup> <sub>5 3</sub> | 6                               | 9                               | <sup>2</sup> <sub>5 8</sub>     | <sup>1 2 3</sup> <sub>8</sub> | 7                               | <sup>2 3</sup> <sub>5 8</sub> |
| 6                           | 7                             | <sup>3</sup> <sub>5 9</sub> | <sup>2</sup> <sub>8</sub>       | 1                               | <sup>2</sup> <sub>5 8</sub>     | <sup>2 3</sup> <sub>4 5</sub> | <sup>2 3</sup> <sub>5 8 9</sub> |                               |

|                               |                             |                                 |                               |                               |                               |                               |                                 |                             |
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| <sup>2</sup> <sub>8 9</sub>   | <sup>5 6</sup> <sub>9</sub> | 3                               | <sup>5 6</sup> <sub>7 8</sub> | 4                             | <sup>5 6</sup> <sub>7 8</sub> | <sup>2</sup> <sub>8 9</sub>   | 1                               | <sup>5</sup> <sub>9</sub>   |
| 4                             | <sup>8</sup> <sub>7</sub>   | <sup>4 5 6</sup> <sub>7 8</sub> | <sup>5 6</sup> <sub>1 2</sub> | 1                             | 9                             | 2                             | <sup>4 5 6</sup> <sub>8</sub>   | <sup>4 5</sup> <sub>3</sub> |
| <sup>1 2</sup> <sub>4</sub>   | <sup>6</sup> <sub>8 9</sub> | <sup>4 5 6</sup> <sub>1 2</sub> | <sup>5 6</sup> <sub>4 8</sub> | 3                             | <sup>5</sup> <sub>8</sub>     | <sup>5 6</sup> <sub>8</sub>   | <sup>4 5 6</sup> <sub>8 9</sub> | 7                           |
| <sup>1 2 3</sup> <sub>9</sub> | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>9</sub>       | 4                             | <sup>2</sup> <sub>7 8</sub>   | 6                             | <sup>1</sup> <sub>7 8</sub>   | <sup>5</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>5 9</sub> |
| 5                             | <sup>1</sup> <sub>7</sub>   | <sup>6</sup> <sub>9</sub>       | <sup>1</sup> <sub>7 8</sub>   | 3                             | 4                             | <sup>1</sup> <sub>8 9</sub>   | <sup>6</sup> <sub>7 8 9</sub>   | 2                           |
| <sup>1 2 3</sup> <sub>6</sub> | 8                           | <sup>1 2</sup> <sub>7</sub>     | 9                             | <sup>1 2</sup> <sub>5</sub>   | <sup>1</sup> <sub>7</sub>     | <sup>5</sup> <sub>4 5 6</sub> | <sup>4</sup> <sub>6 4 5</sub>   | <sup>3</sup> <sub>1</sub>   |
| <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>4 5</sub> | <sup>1</sup> <sub>5</sub>       | <sup>4</sup> <sub>8</sub>     | <sup>2</sup> <sub>8</sub>     | 7                             | <sup>1</sup> <sub>9</sub>     | <sup>2</sup> <sub>9</sub>       | 6                           |
| 7                             | <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>6</sub>       | <sup>1</sup> <sub>6</sub>     | <sup>2</sup> <sub>4</sub>     | <sup>1 2</sup> <sub>6</sub>   | <sup>3</sup> <sub>9</sub>     | <sup>1 2</sup> <sub>4</sub>     | <sup>5</sup> <sub>8</sub>   |
| <sup>1</sup> <sub>4</sub>     | <sup>6</sup> <sub>8</sub>   | 2                               | 9                             | <sup>4 5 6</sup> <sub>8</sub> | <sup>1</sup> <sub>5</sub>     | <sup>1</sup> <sub>5 6</sub>   | 7                               | <sup>3</sup> <sub>1 4</sub> |

|                               |                               |                               |                                 |                               |                               |                               |                             |                                 |
|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|---------------------------------|
| 1                             | <sup>4</sup> <sub>9</sub>     | <sup>2</sup> <sub>4 7 8</sub> | <sup>3</sup> <sub>6</sub>       | 5                             | <sup>3</sup> <sub>6</sub>     | <sup>2</sup> <sub>4 7</sub>   | <sup>2</sup> <sub>4 9</sub> | <sup>2</sup> <sub>4 8</sub>     |
| <sup>4</sup> <sub>7 8 9</sub> | <sup>4 5 6</sup> <sub>9</sub> | <sup>4</sup> <sub>7 8</sub>   | 2                               | <sup>4</sup> <sub>8 9</sub>   | 1                             | <sup>4 5</sup> <sub>7 9</sub> | <sup>4 5</sup> <sub>9</sub> | <sup>4 5</sup> <sub>8</sub>     |
| <sup>4</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>4 5</sub>   | 3                             | <sup>4</sup> <sub>8</sub>       | 7                             | <sup>8</sup> <sub>9</sub>     | <sup>4 5</sup> <sub>9</sub>   | 6                           | 1                               |
| 3                             | <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>4</sub>     | <sup>4 5 6</sup> <sub>7 8</sub> | <sup>2</sup> <sub>4 8</sub>   | <sup>2</sup> <sub>5 6</sub>   | <sup>4 5 6</sup> <sub>8</sub> | <sup>2</sup> <sub>4 5</sub> | 9                               |
| 6                             | 2                             | 9                             | <sup>1</sup> <sub>4 5</sub>     | <sup>1</sup> <sub>4</sub>     | <sup>5</sup> <sub>8</sub>     | <sup>4 5</sup> <sub>8</sub>   | <sup>4 5</sup> <sub>3</sub> | 7                               |
| <sup>4</sup> <sub>7</sub>     | 8                             | 5                             | 9                               | 3                             | <sup>2</sup> <sub>6 4</sub>   | <sup>2</sup> <sub>6</sub>     | 1                           | <sup>2</sup> <sub>4 6</sub>     |
| <sup>2</sup> <sub>4</sub>     | 3                             | <sup>1 2</sup> <sub>4</sub>   | <sup>1</sup> <sub>5</sub>       | 6                             | <sup>2</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>4 5</sub>   | 8                           | <sup>2</sup> <sub>4 5</sub>     |
| <sup>2</sup> <sub>4 8 9</sub> | 7                             | <sup>2</sup> <sub>4 8</sub>   | <sup>5</sup> <sub>8</sub>       | <sup>3</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>5 8 9</sub> | <sup>2 3</sup> <sub>8 9</sub> | 1                           | <sup>2 3</sup> <sub>4 5 6</sub> |
| 5                             | <sup>1</sup> <sub>6 9</sub>   | <sup>1 2</sup> <sub>8</sub>   | <sup>1</sup> <sub>3</sub>       | <sup>1 2</sup> <sub>8 9</sub> | 4                             | <sup>2 3</sup> <sub>6 9</sub> | 7                           | <sup>2 3</sup> <sub>6</sub>     |

|                               |                           |                               |                                 |                                 |                               |                               |                               |                                 |
|-------------------------------|---------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|
| <sup>4</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>6</sub> | <sup>4</sup> <sub>7 8</sub>   | 5                               | <sup>2 3</sup> <sub>8</sub>     | 1                             | <sup>4</sup> <sub>7 8</sub>   | 9                             | <sup>2</sup> <sub>4</sub>       |
| 1                             | 2                         | <sup>7 8</sup> <sub>4 6</sub> | 9                               | <sup>4</sup> <sub>6</sub>       | <sup>7 8</sup> <sub>4 6</sub> | 5                             | 3                             |                                 |
| 9                             | <sup>3</sup> <sub>5</sub> | <sup>3</sup> <sub>4 5 8</sub> | <sup>2 3</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>7</sub>     | <sup>1 2</sup> <sub>4 6</sub> | <sup>1 2</sup> <sub>4 6</sub> | <sup>1 2</sup> <sub>4 6</sub> |                                 |
| <sup>2 3</sup> <sub>5 6</sub> | 4                         | <sup>2 3</sup> <sub>5 9</sub> | 8                               | <sup>1 2 3</sup> <sub>4</sub>   | <sup>2 3</sup> <sub>6 9</sub> | <sup>1</sup> <sub>6</sub>     | 7                             | <sup>1 2</sup> <sub>6</sub>     |
| <sup>2 3</sup> <sub>7</sub>   | <sup>3</sup> <sub>9</sub> | <sup>2 3</sup> <sub>7 9</sub> | <sup>1 2 3</sup> <sub>4</sub>   | <sup>1 2 3</sup> <sub>4 6</sub> | <sup>2 3</sup> <sub>9</sub>   | 5                             | <sup>1 2</sup> <sub>4 6</sub> | 8                               |
| <sup>2</sup> <sub>6</sub>     | 8                         | 1                             | 7                               | <sup>2</sup> <sub>4 6</sub>     | 5                             | <sup>4</sup> <sub>6 9</sub>   | 3                             | <sup>2</sup> <sub>4 6 9</sub>   |
| <sup>3</sup> <sub>4</sub>     | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub>     | <sup>4</sup> <sub>8 9</sub>     | 5                               | <sup>4</sup> <sub>6 9</sub>   | 2                             | <sup>1</sup> <sub>4 8</sub>   | 7                               |
| <sup>2 3</sup> <sub>4 5</sub> | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>5 9</sub>   | <sup>2 3</sup> <sub>4 8 9</sub> | <sup>1 2 3</sup> <sub>4</sub>   | <sup>2 3</sup> <sub>6 9</sub> | <sup>1</sup> <sub>4 8 9</sub> | <sup>1</sup> <sub>4 5 6</sub> | <sup>1</sup> <sub>4 5 6 9</sub> |
| <sup>2 3</sup> <sub>4 5</sub> | 7                         | 6                             | <sup>1 2 3</sup> <sub>4</sub>   | <sup>1 2 3</sup> <sub>4</sub>   | 8                             | <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>4 5</sub>   | <sup>9</sup> <sub>9</sub>       |

|                               |                                 |                                 |                             |                                 |                                 |                                   |                                 |                                 |
|-------------------------------|---------------------------------|---------------------------------|-----------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| 6                             | <sup>4</sup> <sub>8 9</sub>     | <sup>4</sup> <sub>8 9</sub>     | 2                           | <sup>4 5</sup> <sub>8</sub>     | 1                               | 3                                 | <sup>4</sup> <sub>7</sub>       | <sup>4 5</sup> <sub>7 8</sub>   |
| <sup>1 2 3</sup> <sub>4</sub> | 7                               | <sup>2 3</sup> <sub>8</sub>     | <sup>4 5</sup> <sub>8</sub> | <sup>3</sup> <sub>4 5 6</sub>   | <sup>3</sup> <sub>4 5 6</sub>   | <sup>4 5 6</sup> <sub>8</sub>     | 9                               | <sup>1 2</sup> <sub>4 5 6</sub> |
| 5                             | <sup>1 2 3</sup> <sub>4</sub>   | <sup>2 3</sup> <sub>4 8</sub>   | <sup>4</sup> <sub>7 9</sub> | <sup>3</sup> <sub>8</sub>       | <sup>4</sup> <sub>6</sub>       | <sup>4</sup> <sub>6</sub>         | <sup>1 2</sup> <sub>4 6</sub>   | <sup>1 2</sup> <sub>4 6</sub>   |
| 4                             | <sup>1 2 3</sup> <sub>5 6</sub> | <sup>2 3</sup> <sub>7</sub>     | <sup>1</sup> <sub>7</sub>   | <sup>5</sup> <sub>7</sub>       | <sup>2</sup> <sub>5 6</sub>     | <sup>5 6</sup> <sub>7</sub>       | 8                               | <sup>3</sup> <sub>5 6</sub>     |
| 8                             | <sup>2 3</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>9 7</sub>   | <sup>4 5</sup> <sub>7</sub> | <sup>2</sup> <sub>4 5 6</sub>   | <sup>2</sup> <sub>4 5 6</sub>   | <sup>1</sup> <sub>4 7</sub>       | <sup>3</sup> <sub>4 6</sub>     | <sup>3</sup> <sub>4 5 6 9</sub> |
| <sup>1</sup> <sub>7</sub>     | <sup>1</sup> <sub>5 6 9</sub>   | <sup>5 6</sup> <sub>7 9</sub>   | 3                           | <sup>1</sup> <sub>4 5 6</sub>   | <sup>4 5 6</sup> <sub>7 8</sub> | 2                                 | <sup>4</sup> <sub>6 7</sub>     | <sup>4 5 6</sup> <sub>7 9</sub> |
| 9                             | <sup>2 3</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>6 4</sub>   | <sup>1</sup> <sub>4</sub>   | <sup>2 3</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>4 8</sub>   | <sup>4</sup> <sub>8</sub>         | 5                               | <sup>1 2 3</sup> <sub>4 6</sub> |
| <sup>2 3</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>8</sub>       | 1                           | 6                               | <sup>4 5</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>4 5 8 9</sub> | <sup>2 3</sup> <sub>7 8 9</sub> | <sup>2 3</sup> <sub>7 8</sub>   |
| <sup>2 3</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>4 5 6</sub> | <sup>2 3</sup> <sub>4 5 6</sub> | <sup>1</sup> <sub>4 5</sub> | <sup>1 2 3</sup> <sub>4 5</sub> | <sup>2 3</sup> <sub>4 5</sub>   | <sup>4</sup> <sub>6 4</sub>       | <sup>1 2 3</sup> <sub>4 6</sub> | <sup>1 2 3</sup> <sub>4 6</sub> |

|                |              |                |              |          |              |              |                  |              |          |
|----------------|--------------|----------------|--------------|----------|--------------|--------------|------------------|--------------|----------|
| 5<br>9         | 4            | 7              | 3<br>5 6     | 2        | 3<br>6 8 9   | 1<br>5 6     | 3<br>6 8         | 1<br>5 6     | 3        |
| 8              | 2<br>5 6 9   | 2<br>5 6 9     | 3<br>4 5 6 7 | 3<br>6 9 | 1            | 4 5 6 7      | 4<br>6 7         | 3<br>5 6     |          |
| 1<br>5         | 3            | 1<br>5 6       | 4 5 6 7      | 6<br>8   | 7 8          | 6            | 9                | 4<br>7 8     | 2        |
| 1 2 3<br>7     | 1 2<br>8 9   | 1 2 3<br>4 8 9 | 3<br>7       | 3<br>6 9 | 5            | 1 2<br>4 6 7 | 2 3<br>4 6 7 8 9 | 1<br>7 8 9   | 3<br>6   |
| 6              | 2<br>9       | 4<br>2 3 9     | 8            | 1        | 2 3<br>7 9   | 2<br>4 7     | 5                | 7<br>9       | 3        |
| 1 2 3<br>5 7 9 | 1 2<br>5 8 9 | 1 2 3<br>5 8 9 | 3<br>7       | 4        | 2 3<br>6 7 9 | 1 2<br>6 7   | 2 3<br>6 7 8 9   | 1<br>6 7 8 9 | 3<br>6   |
| 2<br>5 9       | 7            | 2<br>5 6 8 9   | 1            | 5 6<br>8 | 6<br>8       | 3            | 2<br>6 9         | 4            |          |
| 2 3<br>5       | 2<br>5 6 8   | 2 3<br>5 6 8   | 9            | 5 6<br>8 | 4            | 2<br>5 6 7   | 1<br>5 6 7       | 5 6          |          |
| 4              | 1<br>5 6 9   | 1<br>5 6 9     | 3            | 2        | 7            | 3<br>6       | 8                | 6<br>9       | 5 6<br>9 |

|          |                |            |            |            |              |              |              |                |            |
|----------|----------------|------------|------------|------------|--------------|--------------|--------------|----------------|------------|
| 1<br>3   | 2<br>6 4       | 1<br>3     | 2<br>4 5   | 8          | 2 3<br>5 9   | 2<br>4 6 9   | 1 2 3<br>4 6 | 7              |            |
| 8        | 2<br>6 4       | 1<br>3     | 2<br>4     | 2 3<br>4 7 | 2 3<br>9 7 9 | 2<br>4 6 9   | 5            | 1 2 3<br>4 9   |            |
| 9        | 5<br>7         | 5<br>7     | 6          | 2 3<br>4   | 1            | 2<br>4 8     | 2 3<br>4     | 2 3<br>8       |            |
| 2        | 1<br>5 7 8     | 3<br>6     | 6          | 1<br>5 7 8 | 1<br>3       | 4            | 5<br>7       | 9              | 5<br>8     |
| 5<br>7   | 3<br>4 5 7 8 9 | 3<br>5 7 9 | 3<br>5 7 8 | 5<br>7 8   | 3<br>6 7     | 3<br>5 6 7   | 1            | 2<br>4 7 8     | 2<br>4 5 8 |
| 1<br>5 7 | 4<br>8         | 1<br>5 7   | 9          | 1 2<br>7   | 2<br>5       | 3            | 4<br>8       | 6              |            |
| 4        | 1<br>7 9       | 3<br>6     | 8          | 1 2<br>7   | 5<br>9       | 2<br>6 9     | 2<br>6 9     | 1 2 3<br>6 9   | 1 2 3<br>9 |
| 6        | 1<br>5 9       | 3<br>6 9   | 1<br>5 9   | 1 2<br>4   | 7            | 2<br>9       | 8            | 1 2 3<br>4 5 9 | 1 2 3<br>9 |
| 1<br>5 7 | 1<br>5 9       | 2          | 3          | 1<br>4 6 9 | 8            | 4 5 6<br>7 9 | 1<br>4 6     | 1<br>4 5 9     |            |

|              |              |              |              |            |            |                |            |              |  |
|--------------|--------------|--------------|--------------|------------|------------|----------------|------------|--------------|--|
| 1<br>3 9     | 2            | 7            | 1<br>5       | 8          | 4          | 6              | 5<br>9     | 3<br>5 9     |  |
| 8            | 1<br>3 6 4   | 3<br>6       | 1 2 3<br>5 7 | 9          | 1<br>5 6   | 2 3<br>4 5 7   | 2 3<br>5 7 | 2 3<br>4 5 7 |  |
| 4<br>6 9     | 5            | 4<br>6 9     | 2 3<br>7     | 2<br>6     | 3<br>6 4   | 2 3<br>7 8     | 2 3<br>8 9 | 1            |  |
| 5            | 4            |              | 1<br>9 7     | 2<br>6     | 1<br>8 9   | 2 3<br>7       | 2 3<br>6 7 | 2 3          |  |
|              | 3<br>6 7 9   | 3<br>6 9     | 1<br>4 5 7   | 2<br>6     | 2<br>5 6 9 | 2<br>4 5 7     | 2<br>5 6   | 8            |  |
| 2            | 7 8          | 6<br>8       | 4 5<br>7     | 3          | 5 6<br>8   | 9              | 1<br>4 5 7 |              |  |
| 1<br>3 4     | 1<br>3 8     | 3<br>4 5 8   | 6            | 1<br>4 5 9 | 3<br>6     | 1 2 3<br>5 8 9 | 7          | 2 3<br>5 9   |  |
| 1<br>3 4 6 7 | 1<br>3 6 7 8 | 3<br>4 5 6 8 | 3<br>9       | 1<br>4 5   | 2          | 1<br>5 8 9     | 3<br>5 9   | 3<br>5 9     |  |
| 1<br>3 9     | 1<br>3 9     | 2            | 8            | 1<br>5     | 7          | 1<br>5 3       | 4          | 6            |  |

|            |                |              |            |              |              |            |              |              |   |
|------------|----------------|--------------|------------|--------------|--------------|------------|--------------|--------------|---|
| 1<br>4 7 9 | 5              | 2            | 3<br>4 9   | 3<br>6       | 8            | 1<br>4 7 9 | 3<br>4 7     | 1<br>3 4 7   |   |
| 1<br>4 8 9 | 1<br>3 4 6 8 9 | 3<br>6 8 9   | 3<br>5 9   | 3<br>4 5 8   | 7            | 4 5        | 2            | 1<br>3 4 5   |   |
| 4<br>7 8 9 | 4<br>7 8 9     | 3<br>6 7 8 9 | 2 3<br>5 9 | 2 3<br>4 5 8 | 1            | 6          | 4 5<br>7 9   | 3<br>4 5 7   |   |
| 5 6<br>7   | 3<br>6 7       | 4            | 8          | 2 3<br>5 6 7 | 2 3<br>5     | 9          | 1<br>3 5 6 7 | 1 2 3<br>5 7 |   |
| 2          | 3<br>6 7 8 9   | 5<br>7 8 9   | 4          | 1            | 5<br>9 7     | 5          | 3<br>5 6 7   | 5<br>7       | 3 |
| 5 6<br>7 9 | 3<br>6 7 9     | 1            | 2 3<br>5 7 | 2 3<br>5 6 7 | 2 3<br>5 9   | 2<br>4 5 7 | 3<br>4 5 6 7 | 8            |   |
| 4 5<br>7 9 | 4<br>7 9       | 6            | 1          | 2<br>5 4 5   | 2<br>4 5     | 3          | 8            | 4 5<br>7     | 2 |
| 1<br>4 5 7 | 1 2<br>4 7 8   | 5<br>7 8     | 2 3<br>7   | 9            | 4 5<br>8 7   | 4 5<br>7   | 4 5<br>7     | 6            |   |
| 3          | 4<br>7 8       | 2<br>7 8     | 5<br>7 8   | 6            | 2<br>5 4 5 8 | 1          | 4 5<br>7     | 9            |   |

|              |              |            |              |                |              |            |            |   |  |
|--------------|--------------|------------|--------------|----------------|--------------|------------|------------|---|--|
| 1<br>5 7 8   | 1<br>4 5 7 8 | 1<br>3 7 8 | 2<br>5 7 8 9 | 1<br>6 7 8 9   | 2 3<br>6 7 9 | 3<br>6     | 2 3        |   |  |
| 9            | 1<br>5 7     | 1<br>3 7   | 2<br>5 7     | 1<br>6 7       | 2 3<br>6 7   | 8          | 4          |   |  |
|              | 6            | 2          | 3            | 4<br>7 8 9     | 4<br>7 8 9   | 5          | 1          |   |  |
| 1 2<br>7 8   | 1 2<br>7 8 9 | 1<br>7 8 9 | 6            | 2 3<br>7 8     | 3<br>7 8     | 4          | 5          |   |  |
| 3            | 2<br>5 7 8   |            | 4            | 1              | 5<br>7 8     | 9          | 6          |   |  |
| 1 2<br>5 6 8 | 1 2<br>4 5 8 | 1<br>4 6 8 | 9            | 2 3<br>5 8     | 3<br>5 8     | 7          | 2 3<br>8   |   |  |
| 2<br>6 8     | 2<br>8 9     | 6<br>8 9   | 1            | 4 5<br>9       | 4 5<br>9     | 2 3<br>4 5 | 7          |   |  |
| 4            | 1<br>9       | 5          | 7            | 3<br>9         | 2            | 3<br>6 8   | 1<br>3 6 8 | 3 |  |
| 1 2<br>7     | 3            | 1<br>7     | 8            | 4 5 6<br>4 5 6 | 4 5<br>6     | 1 2<br>4 5 | 9          |   |  |

|              |              |                |                |            |              |            |              |          |        |
|--------------|--------------|----------------|----------------|------------|--------------|------------|--------------|----------|--------|
| 6            | 4<br>7 8 9   | 2              | 1<br>7 8 9     | 5          | 3<br>7 9     | 1<br>4 8 9 | 1<br>7 9     | 4<br>9   |        |
| 1<br>7 8 9   | 5<br>7 8 9   | 1<br>5 7 8 9   | 1<br>6 9       | 4          | 1<br>8 9     | 3          | 2            |          |        |
| 1<br>3 7 8 9 | 4<br>7 8 9   | 1<br>3 7 8 9   | 1<br>6 9       | 2          | 1<br>4 6 8 9 | 5 6<br>7 9 | 4 5 6<br>9   |          |        |
| 4            | 3            | 5 6<br>7 9     | 1<br>5 7 9     | 2          | 8            | 1<br>6 9   | 5 6<br>9     | 5 6<br>9 |        |
|              | 1            | 5 6<br>7 8 9   | 4 5<br>7 9     | 3<br>4 9 7 | 3<br>5 6 9   | 2          | 4 5 6<br>9 8 |          | 3      |
| 2<br>8 9     | 2<br>5 6 8 9 | 5 6<br>8 9     | 1<br>4 5 9     | 1<br>3 4 9 | 3<br>5 6 9   | 7          | 1<br>4 5 6 9 | 3<br>8   |        |
| 5            | 4<br>8 9     | 6<br>8 9       | 1<br>3 4 6 8 9 | 2          | 7            | 3<br>4 6 9 | 6<br>9       | 4<br>6 9 | 6<br>9 |
| 2 3<br>7 9   | 2<br>6 7 9   | 3<br>4 5 6 7 9 | 3<br>4 5 9     | 3<br>4 9   | 3<br>5 9     | 5 6<br>9   | 8            | 1        |        |
| 1<br>3 9     | 4<br>9       | 1<br>3 9       | 6              | 8          | 1<br>5 9     | 3<br>4 5 9 | 2            | 7        |        |



|                               |                               |                               |                             |                             |                               |                               |                                 |                               |
|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|
| 3                             | <sup>1 2</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>4 5</sub> | 8                           | <sup>1 2</sup> <sub>4</sub> | <sup>6</sup> <sub>4 5 6</sub> | 7                             | <sup>1 2</sup> <sub>6</sub>     | 9                             |
| <sup>1 2</sup> <sub>5</sub>   | 8                             | 7                             | 3                           | <sup>1 2</sup> <sub>6</sub> | <sup>5 6</sup> <sub>9</sub>   | <sup>1 2</sup> <sub>6</sub>   | 4                               | <sup>2</sup> <sub>5 6</sub>   |
| 6                             | <sup>1 2</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>4 5</sub> | 7                           | <sup>1 2</sup> <sub>4</sub> | <sup>4 5</sup> <sub>9</sub>   | <sup>1 2 3</sup> <sub>8</sub> | <sup>1 2 3</sup> <sub>8</sub>   | <sup>2 3</sup> <sub>5 8</sub> |
| <sup>1 2</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>6</sub>   | 8                             | 5                           | <sup>3</sup> <sub>4</sub>   | <sup>4 6</sup> <sub>6</sub>   | 9                             | 7                               | <sup>2 3</sup> <sub>4 6</sub> |
| <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5 6</sub>   | <sup>1 2</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub>   | 8                             | <sup>1 2 3</sup> <sub>6</sub> | <sup>1 2 3</sup> <sub>6 4</sub> | <sup>2 3</sup> <sub>6</sub>   |
| <sup>2</sup> <sub>9</sub>     | 4                             | 3                             | <sup>1 2</sup> <sub>6</sub> | 7                           | 5                             | <sup>1 2</sup> <sub>8</sub>   | <sup>2</sup> <sub>6</sub>       |                               |
| <sup>1 2</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>5 6</sub> | <sup>1 2</sup> <sub>5 6</sub> | 4                           | <sup>5</sup> <sub>7 8</sub> | 3                             | <sup>2</sup> <sub>8</sub>     | <sup>2</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>7 8</sub>   |
| <sup>2</sup> <sub>7 8 9</sub> | 3                             | <sup>2</sup> <sub>6</sub>     | <sup>6</sup> <sub>9</sub>   | <sup>7 8</sup>              | 1                             | 4                             | 5                               | <sup>2</sup> <sub>7 8</sub>   |
| 4                             | <sup>5 6</sup> <sub>7</sub>   | <sup>5 6</sup> <sub>9</sub>   | <sup>6</sup> <sub>9</sub>   | <sup>5</sup> <sub>7 8</sub> | 2                             | <sup>3</sup> <sub>8</sub>     | <sup>3</sup> <sub>8 9</sub>     | 1                             |

|                             |                               |                             |                               |                             |                                 |                             |                             |                             |
|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|---------------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>7</sub>   | 2                             | 6                           | <sup>1</sup> <sub>7</sub>     | 3                           | 9                               | <sup>4 5</sup> <sub>8</sub> | <sup>4 5</sup> <sub>8</sub> | <sup>5</sup> <sub>8</sub>   |
| <sup>5</sup> <sub>8</sub>   | <sup>4</sup> <sub>7 8</sub>   | <sup>4 5</sup> <sub>7</sub> | 6                             | <sup>2</sup> <sub>5 8</sub> | <sup>2</sup> <sub>5 8</sub>     | 3                           | 9                           | 1                           |
| 9                           | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>5</sub>   | 4                             | <sup>1</sup> <sub>5 8</sub> | <sup>1</sup> <sub>5 8</sub>     | 7                           | 6                           | 2                           |
| <sup>2</sup> <sub>6</sub>   | <sup>1</sup> <sub>7</sub>     | <sup>3</sup> <sub>7</sub>   | <sup>1</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>6</sub>   | 4                               | <sup>1</sup> <sub>5 8</sub> | <sup>1</sup> <sub>5 8</sub> | 9                           |
| <sup>1</sup> <sub>7</sub>   | 5                             | 4                           | <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>3</sub>   | <sup>1</sup> <sub>6</sub>       | <sup>1</sup> <sub>3</sub>   | <sup>2</sup> <sub>7 8</sub> | <sup>3</sup> <sub>6</sub>   |
| <sup>1 2</sup> <sub>7</sub> | <sup>6</sup> <sub>4</sub>     | 8                           | 5                             | <sup>1 2</sup> <sub>7</sub> | <sup>1 2 3</sup> <sub>6 4</sub> | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>3</sub>   | <sup>3</sup> <sub>6</sub>   |
| 3                           | <sup>1</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>5</sub>   | 2                             | 4                           | <sup>1</sup> <sub>5 8</sub>     | 9                           | <sup>1</sup> <sub>7 8</sub> | <sup>5</sup> <sub>7 8</sub> |
| 4                           | <sup>1</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>5</sub>   | <sup>1</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>3</sub>   | <sup>1</sup> <sub>5 8</sub>     | 7                           | 6                           | <sup>2</sup> <sub>5 8</sub> |
| <sup>5</sup> <sub>8</sub>   | <sup>1</sup> <sub>7 8 9</sub> | 2                           | <sup>1</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>3</sub>   | <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>5 8</sub> | <sup>1</sup> <sub>5 8</sub> | 4                           |

|                               |                               |                               |                             |                                 |                               |                               |                             |                               |
|-------------------------------|-------------------------------|-------------------------------|-----------------------------|---------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|
| 1                             | <sup>2 3</sup> <sub>5</sub>   | <sup>2 3</sup> <sub>5 8</sub> | <sup>4 5</sup> <sub>8</sub> | <sup>4 5</sup> <sub>8</sub>     | 6                             | 7                             | <sup>4</sup> <sub>8 9</sub> | <sup>4 5</sup> <sub>8 9</sub> |
| <sup>4 5 6</sup> <sub>7</sub> | <sup>5 6</sup> <sub>8</sub>   | <sup>5 6</sup> <sub>7 8</sub> | <sup>4 5</sup> <sub>7</sub> | <sup>4 5</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>7</sub>     | 1                             | 3                           | 2                             |
| <sup>4 5</sup> <sub>7</sub>   | <sup>3</sup> <sub>8</sub>     | 9                             | 2                           | 1                               | <sup>4</sup> <sub>7</sub>     | <sup>5 6</sup> <sub>8</sub>   | <sup>4</sup> <sub>8</sub>   | <sup>4 5</sup> <sub>8</sub>   |
| <sup>2 3</sup> <sub>6</sub>   | <sup>1 2 3</sup> <sub>6</sub> | 4                             | <sup>3</sup> <sub>7</sub>   | <sup>2</sup> <sub>9</sub>       | 5                             | 8                             | <sup>1 2</sup> <sub>7</sub> | <sup>1</sup> <sub>9</sub>     |
| 8                             | 7                             | <sup>1 2 3</sup> <sub>5</sub> | <sup>4</sup> <sub>9</sub>   | <sup>3</sup> <sub>4</sub>       | <sup>2</sup> <sub>9</sub>     | <sup>1 2 3</sup> <sub>4</sub> | <sup>2 3</sup> <sub>5</sub> | <sup>1 2</sup> <sub>4</sub>   |
| 9                             | <sup>1 2 3</sup> <sub>5</sub> | <sup>1 2 3</sup> <sub>5</sub> | 8                           | 6                               | <sup>1 2 3</sup> <sub>4</sub> | <sup>2 3</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>4</sub> | <sup>1</sup> <sub>4 5</sub>   |
| <sup>2 3</sup> <sub>7</sub>   | <sup>1 2 3</sup> <sub>6</sub> | <sup>1 2 3</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub>   | <sup>6</sup> <sub>9</sub>       | <sup>4</sup> <sub>7</sub>     | <sup>2</sup> <sub>9</sub>     | <sup>2</sup> <sub>9</sub>   | 5                             |
| <sup>2</sup> <sub>5 6</sub>   | 4                             | <sup>2</sup> <sub>5 6</sub>   | 1                           | 3                               | 8                             | <sup>2</sup> <sub>9</sub>     | <sup>2</sup> <sub>7 9</sub> | <sup>6</sup> <sub>7 9</sub>   |
| <sup>2</sup> <sub>7</sub>     | <sup>1 2</sup> <sub>8 9</sub> | <sup>1 2</sup> <sub>6</sub>   | <sup>5 6</sup> <sub>7</sub> | <sup>2</sup> <sub>5</sub>       | <sup>2</sup> <sub>9</sub>     | 4                             | <sup>1</sup> <sub>8</sub>   | 3                             |

|                             |                             |                             |                               |                               |                               |                               |                                 |                               |
|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|
| <sup>4</sup> <sub>8</sub>   | 5                           | <sup>3</sup> <sub>7</sub>   | <sup>4</sup> <sub>6</sub>     | 9                             | <sup>4</sup> <sub>8</sub>     | <sup>2</sup> <sub>4 7</sub>   | <sup>2</sup> <sub>4 6</sub>     | 1                             |
| <sup>4</sup> <sub>8 9</sub> | <sup>3</sup> <sub>7</sub>   | 1                           | 2                             | <sup>4 5 6</sup> <sub>8</sub> | <sup>4 5 6</sup> <sub>7</sub> | <sup>4 5</sup> <sub>7</sub>   | <sup>4 5 6</sup> <sub>7 9</sub> | <sup>6</sup> <sub>9</sub>     |
| <sup>4</sup> <sub>9</sub>   | <sup>2</sup> <sub>9</sub>   | 6                           | <sup>1</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>4 5</sub>   | 7                             | 3                             | <sup>2</sup> <sub>4 5</sub>     | 8                             |
| <sup>5 6</sup> <sub>9</sub> | <sup>1</sup> <sub>7</sub>   | <sup>6</sup> <sub>9</sub>   | <sup>5</sup> <sub>7</sub>     | <sup>1</sup> <sub>5 6</sub>   | 2                             | <sup>1</sup> <sub>5 6</sub>   | <sup>3</sup> <sub>6</sub>       | 4                             |
| <sup>2</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>7</sub> | <sup>2</sup> <sub>6</sub>   | <sup>4</sup> <sub>7</sub>     | 9                             | 8                             | <sup>1</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>6</sub>     | 5                             |
| 3                           | 8                           | <sup>2</sup> <sub>4 5</sub> | <sup>4 5 6</sup> <sub>7</sub> | <sup>4 5 6</sup> <sub>4</sub> | <sup>4 5 6</sup> <sub>4</sub> | 9                             | 1                               | <sup>2</sup> <sub>7</sub>     |
| 7                           | <sup>2 3</sup> <sub>9</sub> | <sup>2 3</sup> <sub>5</sub> | <sup>1</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>3</sub>     | <sup>1</sup> <sub>4 5</sub>   | <sup>1 2 3</sup> <sub>9</sub> | 6                               | <sup>2 3</sup> <sub>9</sub>   |
| <sup>2</sup> <sub>5 6</sub> | 4                           | <sup>2 3</sup> <sub>5</sub> | 8                             | <sup>3</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5 6</sub> | 1                             | <sup>2</sup> <sub>7 9</sub>     | <sup>2 3</sup> <sub>7 9</sub> |
| 1                           | <sup>2 3</sup> <sub>6</sub> | 8                           | <sup>3</sup> <sub>5 6</sub>   | 7                             | <sup>2 3</sup> <sub>5 6</sub> | <sup>2</sup> <sub>4 5</sub>   | <sup>2</sup> <sub>4 5</sub>     | <sup>2 3</sup> <sub>9</sub>   |

|                               |                               |                               |                             |                                   |                                 |                                 |                             |                               |
|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|
| 1                             | <sup>2</sup> <sub>7 8</sub>   | <sup>4</sup> <sub>9</sub>     | <sup>2</sup> <sub>9</sub>   | <sup>4 5</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>7</sub>       | <sup>5</sup> <sub>9</sub>       | 6                           | 3                             |
| <sup>5 6</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>9</sub>   | <sup>2 3</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>9</sub> | <sup>1 2</sup> <sub>5 6</sub>     | <sup>1 2</sup> <sub>9</sub>     | <sup>4 5 6</sup> <sub>7</sub>   | 4                           | 8                             |
| <sup>4 5 6</sup> <sub>8</sub> | <sup>5</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>9</sub>     | 3                           | <sup>1</sup> <sub>7</sub>         | <sup>5 6</sup> <sub>9</sub>     | <sup>4 5 6</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub>7</sub> | <sup>1</sup> <sub>5</sub>     |
| 9                             | <sup>1</sup> <sub>5</sub>     | <sup>3</sup> <sub>4</sub>     | 7                           | <sup>1</sup> <sub>5 6</sub>       | <sup>3</sup> <sub>4 5 6</sub>   | <sup>1</sup> <sub>8</sub>       | 2                           | <sup>1</sup> <sub>6</sub>     |
| <sup>4</sup> <sub>6</sub>     | <sup>1 2 3</sup> <sub>7</sub> | <sup>1 2 3</sup> <sub>7</sub> | <sup>1 2</sup> <sub>9</sub> | 8                                 | <sup>1 2 3</sup> <sub>9</sub>   | 5                               | <sup>4</sup> <sub>6</sub>   | <sup>1</sup> <sub>9</sub>     |
| <sup>4 5 6</sup> <sub>8</sub> | <sup>1 2 3</sup> <sub>5</sub> | <sup>1 2 3</sup> <sub>4</sub> | <sup>1 2</sup> <sub>9</sub> | <sup>1 2 3</sup> <sub>4 5 6</sub> | <sup>1 2 3</sup> <sub>5 6</sub> | <sup>1</sup> <sub>8 9</sub>     | <sup>4</sup> <sub>6</sub>   | 7                             |
| <sup>2 3</sup> <sub>7</sub>   | 6                             | 8                             | <sup>1 2</sup> <sub>7</sub> | 4                                 | <sup>1 2 3</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>7</sub>     | <sup>1</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>5 9</sub> |
| <sup>2 3</sup> <sub>7</sub>   | 4                             | 5                             | <sup>1 2</sup> <sub>8</sub> | <sup>1 2 3</sup> <sub>7</sub>     | 9                               | <sup>1 2</sup> <sub>7 8</sub>   | <sup>6</sup> <sub>8</sub>   | <sup>1 2</sup> <sub>6</sub>   |
| <sup>2</sup> <sub>7</sub>     | <sup>1</sup> <sub>9</sub>     | <sup>1</sup> <sub>9</sub>     | <sup>2</sup> <sub>5 6</sub> | <sup>2</sup> <sub>5 6</sub>       | <sup>2</sup> <sub>5 6</sub>     | <sup>2</sup> <sub>7 8</sub>     | 3                           | 4                             |

|                           |                           |   |                           |                             |                             |                               |                             |                             |
|---------------------------|---------------------------|---|---------------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------|-----------------------------|
| 2                         | <sup>3</sup> <sub>6</sub> | 9 | <sup>4</sup> <sub>3</sub> | 1                           | <sup>4 5</sup> <sub>6</sub> | 7                             | 8                           | <sup>5 6</sup> <sub>9</sub> |
| 5                         | 4                         | 8 | 7                         | <sup>3</sup> <sub>6</sub>   | 9                           | <sup>1 2 3</sup> <sub>6</sub> | <sup>2 3</sup> <sub>1</sub> | <sup>6</sup> <sub>9</sub>   |
| 7                         | <sup>3</sup> <sub>6</sub> | 1 | 8                         | <sup>5 6</sup> <sub>9</sub> | 2                           | <sup>3</sup> <sub>6</sub>     | 4                           | <sup>5 6</sup> <sub>9</sub> |
| <sup>1</sup> <sub>3</sub> | 2                         | 6 | <sup>4</sup> <sub>9</sub> | <sup>3</sup> <sub>5</sub>   | 7                           | <sup>1</sup> <sub>4</sub>     | <sup>5</sup> <sub>9</sub>   | 8                           |
| 8                         | 9                         | 5 | 6                         | 2                           | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>4</sub>     | 7                           | 3                           |
| <sup>1</sup> <sub>3</sub> | 7                         | 4 | <sup>3</sup> <sub>9</sub> | 8                           | <sup>1</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>6</sub>   | <sup>2</sup> <sub>5</sub>   | <sup>1</sup> <sub>6</sub>   |
| 4                         | 5                         | 7 | 1                         | 9                           | 3                           | 8                             | 6                           | 2                           |
| 9                         | 8                         | 3 | 2                         | 4                           | 6                           | 5                             | 1                           | 7                           |
| 6                         | 1                         | 2 | 5                         | 7                           | 8                           | <sup>3</sup> <sub>9</sub>     | <sup>3</sup> <sub>9</sub>   | 4                           |

|                 |                 |               |            |             |               |            |            |          |            |                   |
|-----------------|-----------------|---------------|------------|-------------|---------------|------------|------------|----------|------------|-------------------|
| 5<br>9          | 3<br>5 6<br>9   | 3<br>5 6<br>9 | 1<br>9     | 3           | 2             | 4 5 6<br>9 | 7          | 1<br>4   | 6          | 8                 |
| 4               | 2 3<br>5 6<br>9 | 1             | 7 8 9      | 3           | 5 6<br>7 8 9  | 3<br>5 6   | 3          | 2        | 2 3<br>5 6 |                   |
| 7 8             | 2 3<br>5 6      | 7 8           | 1          | 3           | 1<br>4 5 6    | 3<br>4 5 6 | 9          | 1 2<br>4 | 6          | 1 2 3<br>4 5 6    |
| 3               | 6<br>9          | 2             | 4          | 7 8         | 1             | 6          | 5          | 7        | 6          | 9                 |
| 1<br>5<br>8     | 7               | 4 5 6<br>8    | 3<br>8 9   | 3<br>5<br>8 | 3<br>5<br>8 9 | 2          | 1<br>4     | 6        | 1<br>4     | 3<br>6            |
| 1<br>5<br>8 9   | 1<br>4 5<br>9   | 4 5 6<br>8 9  | 6          | 5<br>7 8    | 2             | 1<br>4     | 3<br>8     | 1<br>4   | 4          | 1<br>7            |
| 6               | 1<br>4          | 3<br>9        | 3          | 1<br>4      | 3<br>8        | 3<br>7 8   | 1<br>4     | 1 2<br>4 | 1 2<br>4   |                   |
| 1 2<br>5<br>7   | 8               | 4 5<br>7      | 3<br>7     | 1 2 3<br>7  | 9             | 4<br>7     | 6<br>4 5 6 | 1<br>4   | 6<br>7     | 4 5 6<br>7        |
| 1 2<br>5<br>7 9 | 1<br>4 5<br>9   | 4 5<br>7 9    | 1 2<br>7 8 | 1<br>4      | 6<br>8        | 4<br>7 8   | 6<br>4 5 6 | 1<br>4   | 5 6<br>7 9 | 3<br>4 5 6<br>7 9 |

|               |               |          |              |                 |          |          |            |               |        |        |
|---------------|---------------|----------|--------------|-----------------|----------|----------|------------|---------------|--------|--------|
| 4<br>9        | 6<br>4        | 3<br>9   | 4<br>6       | 3<br>4          | 2 3<br>6 | 2 3<br>6 | 1          | 5<br>8        | 5<br>8 | 7      |
| 1<br>6        | 2             | 1<br>7   | 3<br>6       | 3<br>7          | 8        | 5        | 4          | 3<br>6        | 1<br>6 | 3<br>9 |
| 8             | 1<br>4        | 3<br>7   | 5            | 3<br>4          | 3<br>6   | 9        | 2          | 3<br>6        | 1<br>3 | 3<br>6 |
| 2<br>4 5<br>9 | 3<br>4 5<br>9 | 2 3<br>4 | 1            | 2 3<br>9        | 8        | 6        | 7          | 4 5<br>9      |        |        |
| 2<br>5 6<br>9 | 3<br>5<br>8 9 | 2 3<br>8 | 2 3<br>7     | 2 3<br>5 6<br>9 | 4        | 7        | 1          | 2<br>5<br>9   | 5<br>9 |        |
| 7             | 1<br>4 5<br>9 | 1 2<br>4 | 6            | 2<br>5 6<br>9   | 2<br>6   | 2<br>6   | 3          | 2<br>4 5<br>9 | 8      |        |
| 4 5           | 4 5<br>7 8    | 9        | 3<br>7 8     | 1<br>4          | 6<br>7   | 5<br>8   | 4 5 6<br>8 | 2             |        |        |
| 3             | 4 5<br>7 8    | 4<br>7 8 | 2<br>7 8 9   | 2<br>6<br>7 8 9 | 6<br>4   | 2<br>6   | 5<br>7 8 9 | 1             | 4 5 6  |        |
| 1 2<br>4      | 6             | 1 2<br>4 | 2 3<br>7 8 9 | 5               | 2 3<br>4 | 7        |            | 3<br>4        | 3      |        |

|              |            |          |          |              |            |          |          |            |            |        |
|--------------|------------|----------|----------|--------------|------------|----------|----------|------------|------------|--------|
| 2 3<br>9     | 3<br>9     | 6        | 4 5<br>8 | 3<br>4 5 8 9 | 2 3<br>4 5 | 7        | 2<br>8 9 | 1          |            |        |
| 1 2          |            | 4        | 1<br>7 8 | 1<br>6       | 2<br>6     | 5        | 3        | 8 9        |            |        |
| 1 2 3<br>7 9 | 8          | 5        | 1<br>4   | 3<br>4       | 2 3<br>4   |          | 6        | 4          | 2<br>9     |        |
| 6            | 4 5<br>7   | 2        | 9        | 4 5<br>8     | 1          | 4<br>8   | 3<br>4   | 4<br>7 8   | 3<br>4     |        |
| 4<br>9       | 3<br>1     | 3<br>8 9 | 2        | 4<br>8       | 6<br>7     | 4<br>8 9 | 3<br>6   | 4<br>8 9   | 5          |        |
| 4 5<br>7 9   | 4 5<br>7 9 | 7 8 9    | 4<br>8   | 6<br>3       | 4 5 6      | 2        | 1        | 4<br>7 8 9 | 6          |        |
| 4<br>7 9     | 3<br>2     | 3<br>7 9 | 1<br>4   | 3<br>6       | 1<br>4     | 6<br>8   | 1<br>4   | 3<br>6     | 5<br>7 9   | 3<br>6 |
| 8            | 4 5<br>7   | 3<br>1   | 4 5 6    | 2            | 9          | 4<br>6   | 3<br>4   | 4<br>7     | 3<br>6     |        |
| 4 5<br>9     | 3<br>6     | 3<br>9   | 1<br>4 5 | 3<br>7       | 3<br>4 5   | 1<br>4   | 3<br>8 9 | 2<br>4     | 2 3<br>8 9 |        |

|               |          |          |            |            |          |          |            |            |            |          |
|---------------|----------|----------|------------|------------|----------|----------|------------|------------|------------|----------|
| 1 2<br>4      | 2<br>4   | 2 3<br>4 | 3<br>7 8 9 | 5          | 1<br>4   | 3<br>4   | 1 2 3<br>4 | 6          | 1 2<br>7 9 |          |
| 1<br>4        | 6<br>7   | 5        | 2          | 4<br>8 9   | 3<br>4   | 1<br>4   | 3<br>6     | 1<br>4     | 3<br>8 9   | 1<br>9   |
| 9             | 4        | 6        | 4          | 2 3<br>8   | 3<br>4   | 3<br>4   | 1<br>6     | 1 2 3<br>4 | 1 2 3<br>5 | 1 2<br>7 |
| 2<br>4        | 1        | 7 9      | 4          | 3<br>4     | 2 3<br>4 | 8        | 5          | 7 9        | 6          |          |
| 2<br>4 5 6    | 3<br>4   | 2<br>6   | 1<br>5     | 2<br>4     | 6        | 7        | 1 2<br>9   | 1 2<br>9   | 8          |          |
| 2<br>5 6<br>8 | 2<br>5 6 | 2<br>5 6 | 1<br>5     | 2<br>6     | 9        | 1 2<br>7 | 4          | 3          |            |          |
| 3             | 4 5<br>9 | 1 2<br>4 | 4<br>7 8 9 | 4<br>7 8 9 | 2<br>4   | 6        | 1 2<br>7 9 | 1 2<br>5   | 7 9        |          |
| 2<br>5 6      | 2<br>5 6 | 2<br>6   | 3<br>7 9   | 1<br>4     | 2 3<br>6 | 8        | 2 3<br>7 9 | 4          |            |          |
| 7             | 8        | 1 2<br>4 | 6          | 3<br>4     | 3<br>9   | 5        | 1 2 3<br>9 | 1 2 3<br>9 | 1 2<br>9   |          |

|             |               |        |             |        |        |             |        |             |   |  |
|-------------|---------------|--------|-------------|--------|--------|-------------|--------|-------------|---|--|
| 1           | 5<br>9        | 4<br>2 | 2<br>6<br>9 | 7      | 8      | 2<br>6<br>9 | 4 5    | 3           |   |  |
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| 8 9         | 7             | 3      | 2<br>6<br>9 | 4<br>6 | 5      | 2<br>6<br>9 | 4<br>8 | 1           |   |  |
| 2           | 1             | 5      | 7           | 3<br>6 | 4<br>3 | 8           | 9      | 4           | 6 |  |
| 4<br>6<br>9 | 4<br>9        | 7      | 5           | 8      | 2      | 1           | 3      | 4           | 6 |  |
| 4<br>6      | 3<br>4        | 8      | 6<br>9      | 1      | 4<br>9 | 5           | 2      | 7           |   |  |
| 5<br>3      | 2 3<br>5      | 1      | 8           | 5<br>9 | 6      | 4           | 7      | 2<br>5<br>9 |   |  |
| 4 5         | 4 5<br>8      | 9      | 1           | 2      | 7      | 3           | 6      | 5<br>8      |   |  |
| 7           | 2 3<br>5<br>8 | 6      | 4           | 5<br>9 | 3<br>9 | 2<br>9      | 1      | 2<br>5<br>8 |   |  |

|              |            |        |          |            |          |            |               |          |               |        |
|--------------|------------|--------|----------|------------|----------|------------|---------------|----------|---------------|--------|
| 9            | 2          | 4<br>7 | 3        | 1<br>7     | 6<br>7   | 1          | 5 6<br>7      | 4 5 6    | 8             |        |
| 1<br>5       | 1<br>5     | 6      | 4        | 2<br>7     | 8        | 7<br>9     | 2 3<br>7      | 9        | 3<br>7        |        |
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| 1<br>4 5 6   | 1<br>4 5 6 | 5<br>3 | 2        | 4<br>7     | 3<br>9   | 3<br>7 9   | 1<br>5 6<br>7 | 8        | 1<br>5 6<br>7 | 3<br>6 |
| 7            | 1<br>4     | 6<br>8 | 9        | 1<br>8     | 4<br>8   | 5          | 1 2 3<br>6    | 2 3<br>6 | 1<br>3<br>6   |        |
| 1<br>5       | 3<br>5     | 2      | 1<br>8 9 | 3<br>7 8 9 | 6        | 1<br>7 9   | 5<br>3        | 4        |               |        |
| 4 5 6<br>7 9 | 3<br>7 9   | 8      | 6<br>9   | 4 5<br>9   | 2 3<br>4 | 2 3<br>9   | 5 6<br>7      | 1<br>7   | 5 6           | 3      |
| 5 6<br>7 9   | 3<br>7 9   | 1      | 6<br>8 9 | 5<br>8 9   | 3<br>9   | 4          | 5 6<br>7      | 2        |               |        |
| 2            | 4 5 6      | 5<br>3 | 7        | 1<br>4 5   | 3<br>4   | 8          | 5 6<br>3      | 9        |               |        |

|                |   |                |                             |                             |                             |  |  |  |
|----------------|---|----------------|-----------------------------|-----------------------------|-----------------------------|--|--|--|
| 1 <sup>3</sup> | 2 | 6              | 4 <sup>3</sup> <sub>9</sub> | 5 <sup>3</sup>              | 7                           | 1 <sup>4</sup> <sub>9</sub>              | 5 <sup>9</sup>                           | 8  |
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| 4              | 5 | 7              | 1                           | 9                           | 3                           | 8  | 6  | 2  |
| 9              | 8 | 3              | 2                           | 4                           | 6                           | 5  | 1  | 7  |
| 6              | 1 | 2              | 5                           | 7                           | 8                           |  | 3 <sup>9</sup>                           | 4 <sup>3</sup> <sub>9</sub>              |
| 2              |   | 3 <sup>6</sup> | 9                           | 4 <sup>3</sup>              | 1 <sup>4</sup> <sub>5</sub> | 7  | 8  | 5 <sup>6</sup>                           |
| 5              | 4 | 8              | 7                           |                             | 3 <sup>6</sup>              | 9  | 1 <sup>2</sup> <sub>3</sub> <sub>6</sub> | 2 <sup>3</sup> <sub>1</sub> <sub>6</sub> |
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|  |  |  |  |  |  |                             |  |  |
|--|--|--|--|--|--|-----------------------------|--|--|
| 1 <sup>2</sup>                           | 2  | 1 <sup>2</sup>                           | 3  | 6  | 5  | 4 <sup>9</sup>              | 4 <sup>8</sup> <sub>9</sub>              | 4 <sup>8</sup> <sub>9</sub>              |
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|  |                             |  |                             |                             |  |   |   |   |
|--|-----------------------------|--|-----------------------------|-----------------------------|--|---|---|---|
| 3 <sup>6</sup> <sub>8</sub> <sub>9</sub> | 2 <sup>3</sup>              | 2 <sup>3</sup> <sub>6</sub> <sub>9</sub> | 4 <sup>6</sup> <sub>9</sub> | 7                           | 5  | 1 <sup>8</sup> <sub>9</sub>                           | 3 <sup>1</sup> <sub>6</sub> <sub>4</sub> <sub>9</sub> | 3 <sup>1</sup> <sub>6</sub> <sub>9</sub>  |
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|  |  |  |  |  |  |  |   |   |
|--|--|--|--|--|--|--|---|---|
| 1 <sup>2</sup> <sub>4</sub> <sub>5</sub> | 1 <sup>2</sup> <sub>5</sub>              | 1 <sup>4</sup> <sub>5</sub>              | 1 <sup>2</sup> <sub>6</sub> <sub>9</sub> | 1 <sup>2</sup> <sub>4</sub> <sub>6</sub>                           | 3  | 1 <sup>5</sup> <sub>6</sub> <sub>9</sub> | 8   | 7   |
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|  |   |   |  |  |                             |  |  |   |
|--|---|---|--|--|-----------------------------|--|--|---|
| 5  |   | 1   | 2 <sup>7</sup>                           | 9  | 4                           | 7 <sup>6</sup> <sub>7</sub> <sub>8</sub> | 3 <sup>2</sup> <sub>3</sub> <sub>6</sub> | 2 <sup>3</sup> <sub>6</sub>                           |
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|  |   |  |  |   |   |   |  |  |
|--|---|--|--|---|---|---|--|--|
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|                 |              |             |            |            |              |            |          |            |
|-----------------|--------------|-------------|------------|------------|--------------|------------|----------|------------|
| 5<br>9          | 1            | 4 5<br>7    | 6          | 2 3        | 2 3          |            | 8        | 4 5<br>9   |
| 3               | 4 5<br>7 8 9 | 2           | 1<br>7 8   | 1<br>7 8   | 1<br>7 8     | 1<br>7 9   | 1<br>7 9 | 1<br>7 9   |
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| 1 2<br>5 6      | 4 5<br>7     | 8           | 3          | 1 2<br>6   | 1 2<br>4 5 6 | 1 2<br>6   | 1 2<br>6 | 1 2<br>6   |
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|               |        |        |             |             |               |             |            |          |              |
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| 8             | 7      | 3<br>6 | 2           | 3<br>6<br>9 | 3<br>5 6<br>9 | 3<br>6<br>9 | 1<br>5 6   | 1<br>5 6 | 4            |
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|              |            |            |          |            |             |            |            |              |            |
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| 5            |            | 3<br>7 9   | 4<br>9   | 2 3<br>7   | 2 3<br>7 8  | 6          | 3<br>8 9   | 1<br>7 8 9   | 3          |
| 1 2 3<br>7 9 | 8          | 1 2<br>9   | 1 3<br>7 | 1 3<br>5   | 3<br>7      | 4          | 5<br>9     | 5<br>9       | 6          |

|        |            |            |          |              |            |          |              |              |                  |
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| 1<br>9 | 3<br>6     | 4<br>9     | 3<br>9   | 1 2 3<br>4 6 | 2 3<br>4 6 | 7        | 1 2<br>6     | 8            | 1 2<br>4 5 6     |
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|                 |                 |            |               |          |                 |        |                 |               |                 |
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| 2<br>4 5<br>7   | 1               | 4 5<br>7   | 2<br>6<br>9   | 6<br>9   | 4<br>6          | 2<br>6 | 3<br>5          | 8             | 2 3<br>4 5<br>7 |
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|               |               |               |               |               |               |                   |               |                 |            |
|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|---------------|-----------------|------------|
| 1<br>5<br>8 9 | 3<br>6        | 1<br>4 5<br>9 | 3<br>4        | 3<br>4        | 3<br>4        | 3<br>4            | 2<br>4 5<br>8 | 7               | 1 2<br>4 5 |
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|                    |               |                  |                  |                     |                    |            |        |                         |
|--------------------|---------------|------------------|------------------|---------------------|--------------------|------------|--------|-------------------------|
| 1 2<br>5           | 4             | 1 2<br>6         | 3                | 1 2<br>7 8          | 1<br>6 7 8         | 9          | 1<br>8 | 1<br>5 6 7              |
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|               |                 |               |          |                  |                    |                 |             |               |
|---------------|-----------------|---------------|----------|------------------|--------------------|-----------------|-------------|---------------|
| 2             | 3 1<br>5 6<br>9 | 3<br>4 5 6    | 7        | 4 5<br>9         | 1<br>4 5<br>9      | 1<br>4<br>9     | 3<br>4<br>8 | 1<br>3<br>8 9 |
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|                   |              |                   |                    |             |               |                      |                      |               |
|-------------------|--------------|-------------------|--------------------|-------------|---------------|----------------------|----------------------|---------------|
| 1 2<br>4<br>8     | 1 2 3<br>4   | 2 3<br>4<br>8 6   | 1 3<br>4 6<br>7 9  | 4<br>6<br>9 | 1 3<br>4<br>6 | 1 2<br>6<br>4<br>7 9 | 1 2<br>4<br>6<br>7 8 | 5             |
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| 9                 | 1 3<br>4     | 3<br>4<br>6<br>8  | 1 3<br>4<br>6<br>7 | 2           | 5             | 1<br>6<br>7          | 1 4<br>6<br>7 8      | 1 4<br>6<br>8 |
| 1 2<br>4 5<br>7 8 | 1 2 3<br>4 5 | 2 3<br>4 5<br>7 8 | 3<br>4 5<br>8      | 4 5         | 9             | 2 3<br>4             | 2                    | 6             |
| 6                 | 9            | 2 3<br>4<br>8     | 3<br>4<br>8        | 7           | 2 3<br>4<br>8 | 1 2 3                | 5                    | 1 2 3<br>4    |
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| 4 5               | 8            | 4 5<br>9          | 2                  | 4 5 6<br>9  | 7             | 1 3<br>5 6<br>9      | 1<br>6               | 1 3<br>9      |
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|               |                 |             |             |                   |                 |                 |               |                 |
|---------------|-----------------|-------------|-------------|-------------------|-----------------|-----------------|---------------|-----------------|
| 1 2 3<br>4 5  | 1 2 3<br>5<br>8 | 9           | 1<br>4<br>8 | 6<br>8            | 1<br>4<br>8     | 1 2 3<br>5 6    | 1 3<br>4 5 6  | 7               |
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| 8             | 4               | 3           | 1<br>7 9    | 2<br>7 9          | 1 2<br>7 9      | 5<br>7          | 5<br>9        | 6               |

|                   |                 |                   |             |             |               |               |             |                      |
|-------------------|-----------------|-------------------|-------------|-------------|---------------|---------------|-------------|----------------------|
| 3                 | 4               | 5                 | 6           | 7           | 1             | 2             | 9           | 8                    |
| 1<br>6<br>8 9     | 1<br>6<br>8 9   | 7                 | 2           | 5           | 4<br>9        | 3<br>4 6      | 3<br>4 6    | 1<br>3<br>4 6        |
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| 4 5 6<br>9        | 7               | 4<br>9            | 3<br>8 9    | 1           | 3<br>6<br>8 9 | 2             | 4 5 6<br>9  |                      |
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| 4 5<br>7 8 9      | 3               | 6                 | 5<br>8 9    | 2           | 8 9           | 4<br>7        | 1           | 4 5<br>7             |
| 1 2<br>4 5<br>7 8 | 1<br>5<br>8     | 1 2<br>4<br>8     | 1<br>5<br>8 | 3<br>4<br>6 | 3<br>8        | 9             | 4 5 6<br>7  | 3<br>4 5 6           |
| 1<br>4 5<br>9     | 1<br>5<br>9     | 1<br>4<br>9       | 1<br>5<br>9 | 3<br>4<br>6 | 7             | 4<br>6        | 8           | 2                    |

|                 |                   |            |               |                 |            |               |                      |            |
|-----------------|-------------------|------------|---------------|-----------------|------------|---------------|----------------------|------------|
| 1               | 2<br>5 6          | 3          | 2<br>4 5      | 2<br>4 5 6      | 7          | 5 6           | 8                    | 9          |
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| 8               | 1 2<br>5 6<br>9   | 1 2<br>5 6 | 7             | 1 2 3<br>5 6    | 1 2<br>6   | 1<br>5<br>9   | 1 2 3<br>5 6<br>9    | 4          |

|                               |                               |                             |                             |                               |                                 |                               |                               |                               |                             |              |
|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|--------------|
| 1                             | <sup>4</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>4 7</sub> | <sup>2</sup> <sub>9</sub>   | <sup>2</sup> <sub>7 9</sub>   | 6                               | <sup>4 5</sup> <sub>7 9</sub> | <sup>4 5</sup> <sub>8</sub>   | <sup>2 3</sup> <sub>7 8</sub> | <sup>5</sup> <sub>7 8</sub> | <sup>3</sup> |
| <sup>4</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>7 8 9</sub> | 5                           | <sup>2</sup> <sub>7 9</sub> | <sup>2</sup> <sub>4 7</sub>   | 3                               | 1                             | <sup>2</sup> <sub>7 8</sub>   | <sup>6</sup> <sub>7 8</sub>   | <sup>6</sup>                |              |
| <sup>4</sup> <sub>7</sub>     | 6                             | <sup>4</sup> <sub>7</sub>   | <sup>2</sup> <sub>1 2</sub> | <sup>1 2</sup> <sub>4 5</sub> | 8                               | <sup>4 5</sup> <sub>7</sub>   | <sup>2 3</sup>                | 9                             |                             |              |
| 7                             | 2                             | 8                           | 5                           | <sup>1 3</sup> <sub>6 9</sub> |                                 | <sup>6</sup> <sub>9</sub>     | 4                             | <sup>1 3</sup> <sub>6</sub>   |                             |              |
| <sup>3</sup> <sub>6 9</sub>   | <sup>1 3</sup> <sub>9</sub>   |                             | 4                           | <sup>1 3</sup> <sub>7 8</sub> | <sup>1</sup> <sub>7 9</sub>     | 2                             | 5                             | <sup>1 3</sup> <sub>7 8</sub> | <sup>6</sup>                |              |
| <sup>4 5 6</sup> <sub>9</sub> | <sup>3</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>4</sub>   | <sup>1</sup> <sub>6 9</sub> | <sup>1 3</sup> <sub>7 8</sub> | <sup>1 3</sup> <sub>7 8</sub>   | 2                             | <sup>6</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>7 8</sub>   | <sup>1 3</sup> <sub>6</sub> |              |
| <sup>4 5 6</sup> <sub>8</sub> | <sup>4 5</sup> <sub>7 8</sub> | <sup>4</sup> <sub>7</sub>   | <sup>6</sup> <sub>7 8</sub> | 9                             | <sup>1 4 5 6</sup> <sub>7</sub> | 3                             | <sup>6</sup> <sub>8</sub>     | 2                             |                             |              |
| <sup>4</sup> <sub>8</sub>     | <sup>2</sup> <sub>6 7</sub>   | <sup>4</sup> <sub>7 8</sub> | 1                           | <sup>2 3</sup> <sub>7 8</sub> | <sup>2 3</sup> <sub>6 7</sub>   | <sup>4</sup> <sub>7</sub>     | <sup>5 6</sup> <sub>8 9</sub> | <sup>6</sup> <sub>8 9</sub>   | <sup>5 6</sup> <sub>8</sub> |              |
| <sup>2</sup> <sub>5 6</sub>   | <sup>5</sup> <sub>8 9</sub>   | 3                           | <sup>2</sup> <sub>8</sub>   | <sup>2</sup> <sub>5 8</sub>   | <sup>5 6</sup>                  | 7                             | 1                             | 4                             |                             |              |

|                               |                               |                                 |                                   |                               |                                   |                               |                               |                             |                             |  |
|-------------------------------|-------------------------------|---------------------------------|-----------------------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|--|
| 6                             | <sup>4</sup> <sub>7 8 9</sub> | 2                               | <sup>1</sup> <sub>4 7 8 9</sub>   | 5                             | <sup>4</sup> <sub>7 9</sub>       | <sup>1 3</sup> <sub>8 9</sub> | <sup>1</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>9</sub>   |                             |  |
| 1                             | <sup>5</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>7 8 9</sub>   | 1                                 | <sup>6</sup> <sub>9</sub>     | 3                                 | <sup>1</sup> <sub>8 9</sub>   | <sup>6</sup> <sub>8 9</sub>   | 4                           | 2                           |  |
| <sup>1</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>4</sub>     | <sup>1</sup> <sub>7 8 9</sub>   | <sup>1 3</sup> <sub>4 7 8 9</sub> | <sup>1</sup> <sub>4 6 9</sub> | 2                                 | <sup>1</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>5 6 9</sub> | <sup>5 6</sup> <sub>9</sub> | <sup>5 6</sup> <sub>9</sub> |  |
| 4                             | 3                             | <sup>5 6</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>7 9</sub>       | 2                             | 8                                 | <sup>1</sup> <sub>6 9</sub>   | <sup>1</sup> <sub>5 6 9</sub> | <sup>5 6</sup> <sub>9</sub> | <sup>5 6</sup> <sub>9</sub> |  |
| <sup>7 8 9</sup>              | 1                             | <sup>5 6</sup> <sub>7 8 9</sub> | <sup>4 5</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>4 9</sub>   | <sup>4 5 6</sup> <sub>7 9</sub>   | 2                             | <sup>3</sup> <sub>5 6 9</sub> | <sup>4</sup> <sub>8</sub>   |                             |  |
| <sup>2</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>5 6</sub>   | <sup>5 6</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>4 5</sub>       | <sup>1 3</sup> <sub>4 9</sub> | <sup>1 3</sup> <sub>4 5 6 9</sub> | 7                             | <sup>1</sup> <sub>5 6 9</sub> | <sup>3</sup> <sub>4 8</sub> |                             |  |
| 5                             | <sup>4</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>6 8 9</sub>   | <sup>3</sup> <sub>4 6 8 9</sub>   | 2                             | 7                                 | <sup>1</sup> <sub>4 9</sub>   | <sup>3</sup> <sub>6 9</sub>   | <sup>6</sup> <sub>9</sub>   | <sup>3</sup> <sub>6 9</sub> |  |
| <sup>2</sup> <sub>7 9</sub>   | <sup>4</sup> <sub>7 9</sub>   | <sup>6</sup> <sub>7 9</sub>     | <sup>4</sup> <sub>7 9</sub>       | <sup>6</sup> <sub>7 9</sub>   | <sup>4 5</sup> <sub>9</sub>       | <sup>4</sup> <sub>5 9</sub>   | <sup>4 5 6</sup> <sub>9</sub> | 8                           | 1                           |  |
| <sup>1</sup> <sub>9</sub>     | <sup>3</sup> <sub>4 9</sub>   | <sup>1</sup> <sub>4 9</sub>     | <sup>3</sup> <sub>6 9</sub>       | 8                             | 6                                 | <sup>1</sup> <sub>4 5 9</sub> | <sup>3</sup> <sub>4 5 9</sub> | 2                           | 7                           |  |

|                                   |                               |                               |                               |                               |                               |                             |                                     |                               |                               |                             |
|-----------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------------|-------------------------------|-------------------------------|-----------------------------|
| <sup>1 2 3</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>7</sub>     | <sup>1 2</sup> <sub>8 6</sub> | <sup>2</sup> <sub>4 9</sub>   | <sup>1</sup> <sub>6 8 9</sub> | <sup>6 4</sup> <sub>8 9</sub> | 5                           | <sup>1</sup> <sub>4 7 8</sub>       | <sup>3</sup> <sub>6 4</sub>   | <sup>1 3</sup> <sub>6</sub>   | <sup>3</sup> <sub>6</sub>   |
| <sup>1 2 3</sup> <sub>7 8 9</sub> | 4                             | <sup>1 2</sup> <sub>8 6</sub> | <sup>2</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>6 8 9</sub> | <sup>5</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>9</sub>   | <sup>3</sup> <sub>7 8</sub>         | <sup>1</sup> <sub>6 7</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>1 3</sup> <sub>6</sub> |
| 5                                 | <sup>1</sup> <sub>9</sub>     | <sup>1</sup> <sub>6 8</sub>   | <sup>6 4</sup> <sub>9</sub>   | 3                             | 7                             | <sup>1</sup> <sub>6 9</sub> | <sup>1</sup> <sub>4 8</sub>         | <sup>6</sup> <sub>6</sub>     | 2                             |                             |
| <sup>1 2 3</sup> <sub>7</sub>     | 8                             | <sup>1 2</sup> <sub>5</sub>   | <sup>3</sup> <sub>7 9</sub>   | <sup>5</sup> <sub>9</sub>     | 6                             | 4                           | <sup>2</sup> <sub>9</sub>           | <sup>1 5</sup> <sub>3</sub>   |                               |                             |
| <sup>1</sup> <sub>4</sub>         | <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>7</sub>     | <sup>9</sup>                  | <sup>4 5</sup> <sub>7</sub>   | <sup>4 5</sup>                | 2                           | <sup>1</sup> <sub>6</sub>           | <sup>1 3</sup> <sub>5 6</sub> | 8                             |                             |
| <sup>2 3</sup> <sub>4</sub>       | 6                             | <sup>2</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>4 5 9</sub> | 8                             | 1                             | 7                           | <sup>2</sup> <sub>9</sub>           | <sup>3</sup> <sub>5</sub>     |                               |                             |
| <sup>1</sup> <sub>4</sub>         | <sup>1 2</sup> <sub>5</sub>   | 3                             | 6                             | <sup>2</sup> <sub>4 5 7</sub> | <sup>4 5</sup>                | 8                           | <sup>1</sup> <sub>4 5 7</sub>       | 9                             |                               |                             |
| <sup>1</sup> <sub>4</sub>         | <sup>1 2</sup> <sub>5 9</sub> | 7                             | 8                             | <sup>2</sup> <sub>4 5 9</sub> | <sup>4 5</sup>                | <sup>3</sup> <sub>9</sub>   | <sup>1 2 3</sup> <sub>6 4 5 6</sub> | <sup>1</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>4 5 6</sub> | <sup>1 3</sup> <sub>6</sub> |
| <sup>4</sup> <sub>8 9</sub>       | <sup>2</sup> <sub>5 9</sub>   | <sup>4</sup> <sub>8</sub>     | 1                             | <sup>2</sup> <sub>4 5 7</sub> | <sup>4 5</sup>                | <sup>3</sup> <sub>9</sub>   | <sup>2 3</sup> <sub>6 4 5 6</sub>   | <sup>3</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>6</sub>   |

|                               |                               |                               |                               |                                 |                                 |                                 |                                   |                               |                               |  |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------------|-------------------------------|-------------------------------|--|
| <sup>3</sup> <sub>8</sub>     | 2                             | 9                             | <sup>1</sup> <sub>5</sub>     | <sup>3</sup> <sub>4 6</sub>     | <sup>1</sup> <sub>7 8</sub>     | <sup>5</sup> <sub>8</sub>       | <sup>1</sup> <sub>5 8</sub>       | <sup>5</sup> <sub>7 8</sub>   |                               |  |
| 1                             | <sup>5 6</sup> <sub>7 8</sub> | <sup>5</sup> <sub>7</sub>     | 9                             | <sup>5</sup> <sub>8</sub>       | <sup>2</sup> <sub>5 8</sub>     | 3                               | <sup>2</sup> <sub>5 6</sub>       | 4                             |                               |  |
| 4                             | <sup>5 6</sup> <sub>8</sub>   | <sup>5</sup> <sub>8</sub>     | 7                             | <sup>1</sup> <sub>5 8</sub>     | <sup>1 2 3</sup> <sub>5 8</sub> | <sup>1 2</sup> <sub>5 6 8</sub> | <sup>1 2</sup> <sub>5 6 8 9</sub> | <sup>5 6</sup> <sub>8 9</sub> | <sup>5 6</sup> <sub>8 9</sub> |  |
| 5                             | <sup>1</sup> <sub>7 9</sub>   | <sup>1 3</sup> <sub>7</sub>   | <sup>1</sup> <sub>4 6</sub>   | <sup>1</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>4 8</sub>     | <sup>1</sup> <sub>6 8 9</sub>     | 2                             |                               |  |
| <sup>3</sup> <sub>6 9</sub>   | <sup>1</sup> <sub>9</sub>     | 8                             | <sup>1</sup> <sub>4 5 6</sub> | <sup>2</sup> <sub>5</sub>       | <sup>1</sup> <sub>4 5 6</sub>   | 7                               | <sup>3</sup> <sub>5 6 9</sub>     |                               |                               |  |
| <sup>2 3</sup> <sub>6 9</sub> | 4                             | <sup>1 2 3</sup> <sub>7</sub> | <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>5 6 8 9</sub> | <sup>1</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>5 6 8 9</sub> | <sup>1</sup> <sub>5 6 8 9</sub>   | <sup>3</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>8 9</sub>   |  |
| <sup>2</sup> <sub>8 9</sub>   | 3                             | 4                             | <sup>2</sup> <sub>5 6</sub>   | 7                               | <sup>5</sup> <sub>9</sub>       | <sup>2</sup> <sub>5 6 8</sub>   | <sup>2</sup> <sub>5 6 8</sub>     | 1                             |                               |  |
| 7                             | <sup>1</sup> <sub>5 8</sub>   | <sup>1 2</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>5 6</sub> | <sup>1</sup> <sub>5 6</sub>     | 4                               | 9                               | <sup>2 3</sup> <sub>5 6 8</sub>   | <sup>5 6</sup> <sub>8</sub>   | <sup>3</sup> <sub>5 6</sub>   |  |
| <sup>2</sup> <sub>9</sub>     | <sup>1</sup> <sub>5 9</sub>   | 6                             | 8                             | 3                               | <sup>1</sup> <sub>5 7</sub>     | <sup>2</sup> <sub>4 5</sub>     | <sup>2</sup> <sub>4 5</sub>       | <sup>5</sup> <sub>7</sub>     |                               |  |

|                               |                               |                                 |                               |                               |                                     |                                 |                               |                             |                             |  |
|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------------|---------------------------------|-------------------------------|-----------------------------|-----------------------------|--|
| <sup>2</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>7 9</sub>     | 3                             | <sup>4</sup> <sub>8 9</sub>   | <sup>8 9</sup>                      | <sup>2</sup> <sub>7</sub>       | 1                             | <sup>2</sup> <sub>4 9</sub> |                             |  |
| <sup>5</sup> <sub>9</sub>     | 1                             | 4                               | 6                             | 2                             | 7                                   | <sup>5</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>9</sub>     | <sup>3</sup> <sub>8 9</sub> |                             |  |
| <sup>2 3</sup> <sub>7 9</sub> | <sup>2 3</sup> <sub>8 9</sub> | <sup>2</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>8 9</sub>   | 5                                   | <sup>4</sup> <sub>7</sub>       | <sup>3</sup> <sub>7 9</sub>   | 6                           |                             |  |
| 6                             | 5                             | 3                               | <sup>2</sup> <sub>4 8 9</sub> | <sup>4</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>8 9</sub>         | 1                               | <sup>4</sup> <sub>9</sub>     | 7                           |                             |  |
| 4                             | 7                             | 8                               | <sup>1</sup> <sub>9</sub>     | <sup>1</sup> <sub>5 6 9</sub> | <sup>1 3</sup> <sub>6 9</sub>       | <sup>2 3</sup> <sub>5 6 9</sub> | <sup>3</sup> <sub>5 6 9</sub> | <sup>2 3</sup> <sub>9</sub> |                             |  |
| 1                             | <sup>2</sup> <sub>9</sub>     | <sup>2</sup> <sub>9</sub>       | <sup>4</sup> <sub>7</sub>     | <sup>4 5 6</sup> <sub>7</sub> | <sup>3</sup> <sub>6 4 5 6</sub>     | <sup>3</sup> <sub>4 5 6</sub>   | 8                             | <sup>4</sup> <sub>3</sub>   |                             |  |
| <sup>2 3</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>6 7</sub> | <sup>1 2</sup> <sub>6</sub>     | <sup>1 2</sup> <sub>7 8</sub> | <sup>1</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7 8</sub>         | 4                               | 9                             | <sup>3</sup> <sub>7</sub>   | 5                           |  |
| 8                             | <sup>3</sup> <sub>4 9</sub>   | 5                               | <sup>1</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>6 9</sub>         | <sup>3</sup> <sub>4 7</sub>     | <sup>2</sup> <sub>6</sub>     | <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>3</sub>   |  |
| <sup>2 3</sup> <sub>7 9</sub> | <sup>2 3</sup> <sub>4 6</sub> | <sup>1 2</sup> <sub>6 7 9</sub> | 5                             | <sup>1</sup> <sub>7 9</sub>   | <sup>1 2 3</sup> <sub>6 4 7 8</sub> | <sup>3</sup> <sub>4 7</sub>     | <sup>3</sup> <sub>6 4</sub>   | <sup>3</sup> <sub>6 4</sub> | <sup>1 3</sup> <sub>8</sub> |  |

|                                 |                                 |                                 |                               |                                 |                                 |                                 |                               |                               |  |  |
|---------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|--|--|
| 1                               | <sup>2 3</sup> <sub>5 6 9</sub> | <sup>2 3</sup> <sub>5 6 9</sub> | 7                             | <sup>3</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>6 8</sub>     | <sup>2</sup> <sub>8 9</sub>     | 4                             | <sup>2</sup> <sub>5 8</sub>   |  |  |
| <sup>5 6</sup> <sub>8 9</sub>   | 4                               | 7                               | <sup>6</sup> <sub>8 9</sub>   | <sup>6</sup> <sub>8 9</sub>     | <sup>1 2</sup> <sub>8 6</sub>   | <sup>1 2</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>5 8</sub>   | <sup>1 2</sup> <sub>5 8</sub> |  |  |
| <sup>3</sup> <sub>6 8 9</sub>   | <sup>2 3</sup> <sub>6 9</sub>   | <sup>2 3</sup> <sub>6 9</sub>   | <sup>3</sup> <sub>4 8 9</sub> | <sup>1 2</sup> <sub>4 6 8</sub> | 5                               | <sup>1 2</sup> <sub>6 8</sub>   | <sup>1 2</sup> <sub>6 8</sub> | <sup>1 2</sup> <sub>8</sub>   |  |  |
| 4                               | 6                               | 8                               | <sup>2</sup> <sub>4 6</sub>   | <sup>1</sup> <sub>4 6</sub>     | 7                               | 5                               | <sup>1 2 3</sup> <sub>9</sub> | <sup>1 2 3</sup>              |  |  |
| <sup>4 5</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>5 9</sub>     | <sup>2</sup> <sub>4 5 9</sub>   | <sup>1</sup> <sub>8</sub>     | <sup>2</sup> <sub>4 8</sub>     | 3                               | <sup>1 2</sup> <sub>8 7 8</sub> | <sup>1 2<sub>7 8</sub></sup>  | 6                             |  |  |
| <sup>3</sup> <sub>7 6</sub>     | <sup>2 3</sup> <sub>6 7</sub>   | 1                               | <sup>6</sup> <sub>8</sub>     | <sup>2</sup> <sub>6 8</sub>     | 9                               | 5                               | <sup>2</sup> <sub>7 8</sub>   | 4                             |  |  |
| <sup>3</sup> <sub>4 5 6 7</sub> | <sup>1</sup> <sub>5 6</sub>     | 8                               | 2                             | <sup>3</sup> <sub>4 6 4 6</sub> | <sup>1</sup> <sub>4 6</sub>     | <sup>3</sup> <sub>5 6</sub>     | 9                             |                               |  |  |
| <sup>3</sup> <sub>4 5 6</sub>   | <sup>1</sup> <sub>5 6</sub>     | <sup>3</sup> <sub>4 5 6</sub>   | <sup>3</sup> <sub>4 8 9</sub> | <sup>3</sup> <sub>4 6 8 9</sub> | <sup>1 2 3</sup> <sub>4 6</sub> | <sup>1 2</sup> <sub>5 6</sub>   | 7                             |                               |  |  |
| 2                               | <sup>3</sup> <sub>6 4 9</sub>   | <sup>3</sup> <sub>6 9</sub>     | 5                             | 1                               | 7                               | <sup>3</sup> <sub>4 8</sub>     | <sup>6</sup> <sub>8</sub>     | <sup>3</sup> <sub>8</sub>     |  |  |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|   | 6 | 9 | 2 | 3 | 5 | 1 |   | 6 | 4 | 7 | 8 | 4 | 6 |
| 7 |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   | 3 |   | 3 |   |   | 3 |   |   | 2 | 3 |   | 2 | 3 |
| 7 | 5 | 6 | 4 | 7 | 4 | 5 | 7 | 6 | 1 | 7 | 5 | 9 | 7 |
|   | 3 | 1 |   | 1 |   |   |   | 3 |   | 3 |   | 3 |   |
| 7 | 5 | 6 |   | 8 |   | 8 |   | 5 | 6 | 9 | 7 | 9 | 7 |
|   | 1 | 2 | 3 |   | 7 |   | 6 | 2 | 3 | 2 | 3 | 2 | 3 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   | 2 | 3 | 2 | 3 | 4 | 3 | 1 | 1 | 3 | 3 | 4 | 2 | 3 |
|   | 9 | 4 |   | 4 | 9 | 7 | 8 |   | 7 | 8 |   |   |   |
|   | 8 | 4 | 5 | 3 | 6 | 2 | 9 | 5 | 3 | 4 | 3 | 1 | 1 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   | 3 |   | 1 | 3 | 5 | 1 | 3 |   | 3 | 1 | 3 | 1 | 3 |
| 7 | 9 | 6 |   | 8 | 9 | 5 | 7 | 8 | 9 | 4 | 8 | 8 | 9 |
|   | 4 | 1 | 2 | 3 | 1 | 5 | 3 | 1 | 1 | 3 | 6 | 3 |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   | 2 | 3 | 1 | 2 | 3 | 1 | 5 | 3 | 9 | 1 | 3 | 6 | 4 |
| 7 | 5 |   | 7 | 8 |   | 5 | 8 |   | 2 | 3 | 1 | 2 | 3 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 1 |   | 1 | 2 |   | 6 | 4 | 5 | 1 | 3 | 1 | 3 | 2 | 3 | 2 | 3 |
|   | 4 | 6 |   | 9 |   | 7 | 4 | 7 | 4 | 5 | 9 |   | 6 | 4 | 5 | 6 |
| 1 | 2 | 1 |   |   |   |   | 4 | 5 | 1 | 3 | 2 | 3 | 2 |   | 2 | 3 |
| 4 |   | 9 |   | 9 |   |   | 7 | 8 | 4 |   | 8 | 9 | 8 | 9 | 7 | 8 |
|   | 3 | 7 |   |   |   | 6 | 2 | 4 |   | 4 | 5 |   | 6 | 1 | 4 | 5 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   | 6 | 1 |   | 1 | 2 |   | 9 | 4 | 3 | 4 | 2 | 3 | 5 | 2 | 1 | 2 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 2 |   |   |   |   |   | 4 |   | 4 |   | 2 | 1 | 2 |   | 3 | 6 |
| 4 |   | 9 |   |   |   |   | 7 | 8 | 7 |   | 4 | 8 | 8 | 9 |   |   |
|   | 2 |   | 3 |   | 2 | 3 | 1 | 5 | 6 | 4 | 2 |   | 2 |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 5 |   | 1 | 3 | 1 | 3 | 4 | 5 | 6 | 4 |   | 9 | 7 | 2 | 1 | 2 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 5 |   | 1 | 3 | 1 | 3 | 4 | 5 | 6 | 2 | 7 | 1 | 3 | 8 | 4 | 5 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 7 | 2 | 4 | 3 | 8 | 1 | 5 | 9 |   |   | 6 | 5 | 6 | 1 | 5 |   | 9 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 1 | 3 | 4 | 5 | 6 | 1 | 1 | 3 | 3 | 1 | 3 |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 4 | 5 |   | 6 | 1 | 3 | 1 | 3 | 2 | 1 | 4 | 5 | 1 | 2 | 3 | 8 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 5 |   | 1 | 3 | 8 | 9 |   | 2 | 1 | 1 | 2 | 3 | 5 | 6 | 4 | 1 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 4 | 5 |   | 1 | 4 | 5 |   | 2 | 1 | 2 | 3 | 5 | 3 |   | 6 |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 3 | 1 |   | 1 | 4 | 5 | 6 | 1 | 4 | 5 | 6 |   | 6 | 7 | 1 | 5 | 9 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 5 | 6 |   | 9 |   | 2 | 1 | 2 | 5 | 6 | 3 | 1 | 2 | 5 | 6 | 4 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 5 | 6 |   | 5 |   | 5 | 6 |   | 9 | 8 |   | 6 | 4 |   | 6 | 8 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 2 | 7 | 4 | 5 | 6 |   | 1 | 6 | 1 | 6 | 9 | 3 | 5 | 6 | 5 | 6 | 4 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 6 | 4 |   | 3 |   | 3 | 7 | 5 | 2 | 6 | 9 | 1 | 4 | 2 | 3 |   |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|   | 6 | 5 | 2 | 4 | 8 | 1 |   |   |   | 3 |   | 3 |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 6 | 4 |   | 3 | 6 | 4 |   | 3 |   | 6 | 7 | 5 | 6 | 1 | 4 | 5 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 6 |   |   | 1 |   |   |   |   | 3 | 2 | 5 | 6 | 9 | 4 | 5 | 6 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 5 | 6 |   | 1 | 4 | 6 |   | 1 | 4 | 5 | 7 |   |   | 4 | 5 | 3 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 3 | 1 |   | 1 | 4 | 5 | 8 |   | 7 | 1 | 4 | 9 | 7 |   | 6 | 1 | 2 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 2 |   | 9 | 1 | 4 | 7 | 8 |   | 5 | 1 | 4 | 6 | 3 | 4 | 2 | 1 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 4 |   | 2 |   | 6 |   |   |   | 3 | 4 | 7 | 8 | 9 | 7 | 4 | 5 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 2 |   | 4 | 2 | 3 |   | 4 | 5 | 3 | 1 | 6 | 1 |   | 4 | 6 | 4 | 2 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 7 | 4 |   | 3 |   | 9 | 2 | 5 | 4 | 8 | 4 | 3 | 1 | 6 | 1 | 6 |   |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|   | 6 |   | 2 |   | 5 | 3 | 1 |   | 2 | 5 | 2 | 4 | 2 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 5 | 1 |   | 4 |   | 7 | 8 | 2 |   | 1 | 3 | 1 | 3 | 9 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 3 | 1 |   |   | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 2 | 3 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   | 3 |   | 4 | 6 | 5 | 4 | 5 | 9 | 7 | 5 | 3 | 4 | 1 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 3 | 1 |   | 4 | 3 | 6 | 1 | 2 | 4 | 5 | 7 | 8 | 9 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 7 | 1 |   | 5 |   | 1 | 2 | 1 | 2 | 2 | 3 | 2 | 3 | 6 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   | 8 | 9 |   | 7 | 8 | 9 |   | 6 | 5 | 4 | 1 | 2 | 2 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 6 |   | 5 | 4 | 6 | 3 |   | 1 | 2 | 1 | 2 | 2 |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 2 | 4 |   | 1 |   | 4 | 7 | 8 |   | 3 | 6 |   | 5 |   |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 5 |   | 2 |   | 7 | 1 | 3 | 4 | 3 |   | 8 | 4 | 2 | 2 | 1 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 4 | 5 |   | 4 | 5 | 9 | 6 | 1 | 4 | 5 | 2 | 1 | 5 | 3 | 4 | 5 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 4 | 5 |   | 3 |   | 1 | 2 | 5 | 4 | 5 | 6 | 4 | 7 | 2 | 4 | 5 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 |   | 3 |   | 1 |   | 2 | 4 | 2 | 3 | 5 | 2 | 3 | 4 |   | 6 | 3 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 5 | 6 |   | 4 | 5 | 9 | 5 | 4 | 6 | 1 | 7 | 6 | 4 | 7 | 8 | 9 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 5 | 6 |   | 7 |   | 5 | 9 | 4 |   | 3 | 3 | 6 | 1 | 4 | 5 | 2 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 7 |   | 5 |   | 1 | 5 | 9 | 1 | 2 | 5 |   | 3 | 1 | 2 | 5 |   | 3 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 5 |   | 8 | 3 |   | 1 | 5 |   | 6 | 4 |   | 2 |   | 2 |   | 6 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 2 | 6 | 4 |   |   | 3 |   | 3 |   | 3 |   | 3 | 5 | 1 |   | 3 |   |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 8                         | 5                         | <sup>4</sup> <sub>7</sub> | <sup>6</sup> <sub>9</sub> | <sup>3</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | <sup>3</sup> <sub>6</sub> | <sup>4</sup> <sub>3</sub> | <sup>3</sup> <sub>4</sub> | <sup>4</sup> <sub>7</sub> | <sup>9</sup>              | 2                         | 1                         |
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| <sup>2</sup> <sub>4</sub> | <sup>6</sup> <sub>7</sub> | <sup>6</sup> <sub>9</sub> | <sup>4</sup> <sub>7</sub> | <sup>6</sup> <sub>9</sub> | <sup>7</sup> <sub>8</sub> | <sup>4</sup> <sub>6</sub> | <sup>8</sup>              | 5                         | 3                         | <sup>7</sup> <sub>8</sub> | <sup>9</sup>              | <sup>4</sup> <sub>7</sub> |
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| <sup>4</sup> <sub>5</sub> | <sup>1</sup> <sub>8</sub> |                           | 2                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>8</sub> | 9                         | <sup>1</sup> <sub>6</sub> | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>7</sub> | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>4</sub> | <sup>5</sup> <sub>7</sub> |
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|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
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| 1                         |                           | 5                         | 4                         | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>2</sub> | <sup>1</sup> <sub>9</sub> | <sup>3</sup> <sub>6</sub> |                           | 6                         | <sup>2</sup> <sub>7</sub> | <sup>3</sup> <sub>9</sub> | <sup>3</sup> <sub>7</sub> |
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|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |              |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--------------|
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| 1                         | <sup>3</sup> <sub>7</sub> | 5                         | 6                         | 1                         | <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>8</sub> | <sup>9</sup>              | <sup>1</sup> <sub>2</sub> | 9                         | <sup>3</sup> <sub>5</sub> |                           |              |
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|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |              |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--------------|
| <sup>7</sup> <sub>9</sub> | <sup>3</sup> <sub>7</sub> | <sup>3</sup> <sub>9</sub> | 6                         | 5                         | 8                         | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> |                           |              |
| <sup>5</sup> <sub>8</sub> | <sup>5</sup> <sub>6</sub> | 4                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>7</sub> | <sup>3</sup> <sub>9</sub> | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>7</sub> | <sup>5</sup> <sub>6</sub> | <sup>5</sup> <sub>8</sub> |                           |              |
| 1                         | 2                         | <sup>5</sup> <sub>8</sub> | <sup>4</sup> <sub>7</sub> | <sup>7</sup> <sub>9</sub> | <sup>4</sup> <sub>3</sub> | <sup>7</sup> <sub>9</sub> | <sup>5</sup> <sub>6</sub> | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>7</sub> | <sup>5</sup> <sub>6</sub> | <sup>5</sup> <sub>8</sub> |              |
| <sup>4</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | <sup>5</sup> <sub>6</sub> | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> | <sup>9</sup>              | <sup>6</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | <sup>7</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | <sup>7</sup> <sub>9</sub> |              |
| <sup>4</sup> <sub>6</sub> | <sup>1</sup> <sub>7</sub> | <sup>6</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | <sup>7</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | <sup>6</sup> <sub>4</sub> | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | <sup>4</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>8</sup>              | <sup>9</sup> |
| <sup>4</sup> <sub>5</sub> | <sup>1</sup> <sub>7</sub> | <sup>6</sup> <sub>8</sub> | <sup>2</sup> <sub>9</sub> | <sup>4</sup> <sub>5</sub> | <sup>8</sup>              | <sup>1</sup> <sub>4</sub> | <sup>6</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>9</sub> | <sup>3</sup> <sub>7</sub> |              |
| <sup>2</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | 1                         | 9                         | <sup>3</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | 8                         | <sup>5</sup> <sub>9</sub> | <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>5</sub> | <sup>4</sup>              | <sup>5</sup>              |              |
| 3                         | <sup>7</sup> <sub>9</sub> | 6                         | 8                         | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>9</sub> | <sup>1</sup> <sub>2</sub> | <sup>7</sup> <sub>9</sub> | <sup>4</sup>              | <sup>5</sup>              |              |
| <sup>2</sup> <sub>5</sub> | <sup>5</sup> <sub>8</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>4</sup> <sub>7</sub> | <sup>3</sup> <sub>9</sub> | <sup>1</sup> <sub>2</sub> | <sup>4</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>8</sub> | <sup>9</sup> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>2</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | <sup>4</sup> <sub>7</sub> | <sup>8</sup>              | <sup>9</sup>              | <sup>2</sup> <sub>3</sub> | 1                         | 5                         | <sup>4</sup> <sub>8</sub> | 6                         | <sup>2</sup> <sub>3</sub> | <sup>4</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> |
| 5                         | 3                         | <sup>1</sup> <sub>8</sub> | <sup>6</sup> <sub>9</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>9</sub> | 4                         | <sup>1</sup> <sub>8</sub> | 7                         | <sup>1</sup> <sub>2</sub> | <sup>8</sup>              |                           |                           |
| <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | 5                         | 9                         |                           |                           |                           |
| 3                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>9</sub> | <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>8</sub> | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>8</sub> | <sup>6</sup> <sub>9</sub> | 6                         |                           |                           |                           |
| <sup>6</sup> <sub>7</sub> | <sup>5</sup> <sub>6</sub> | <sup>6</sup> <sub>9</sub> | <sup>4</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> | 2                         | 1                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>7</sub> |                           |
| 4                         | <sup>5</sup> <sub>6</sub> | <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>6</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> |                           |
| 9                         | 2                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>7</sub> | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> |
| <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>6</sub> | <sup>3</sup> <sub>5</sub> | 5                         | 9                         | <sup>2</sup> <sub>8</sub> | 7                         | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>6</sub> |
| 8                         | <sup>1</sup> <sub>4</sub> | <sup>6</sup> <sub>7</sub> | 5                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | 3                         | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> |                           |                           |                           |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |  |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--|
| <sup>1</sup> <sub>5</sub> | 7                         | <sup>1</sup> <sub>4</sub> | 6                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>5</sub> | 3                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> | <sup>4</sup> <sub>5</sub> | <sup>8</sup>              |  |
| 8                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>6</sub> | <sup>9</sup>              | <sup>6</sup>              |  |
| 6                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | 2                         | 8                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | <sup>4</sup> <sub>5</sub> | <sup>9</sup>              | <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>9</sup>              |  |
| <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | 5                         | <sup>4</sup> <sub>3</sub> | <sup>6</sup> <sub>7</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | <sup>8</sup>              | <sup>1</sup> <sub>2</sub> |  |
| <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | 8                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>5</sub> | <sup>1</sup> <sub>7</sub> | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>9</sub> | <sup>2</sup> <sub>3</sub> | <sup>5</sup> <sub>6</sub> | <sup>9</sup>              |  |
| 4                         | 6                         | <sup>1</sup> <sub>7</sub> | <sup>3</sup> <sub>5</sub> | <sup>8</sup>              | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> |  |
| <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | 9                         | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> |  |
| <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | <sup>5</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>7</sup>              |  |
| <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>6</sub> | 2                         | <sup>1</sup> <sub>5</sub> | <sup>8</sup>              | 9                         | <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>3</sup>              |  |



|                                 |                                 |                             |                                   |                             |                             |                               |                               |                               |
|---------------------------------|---------------------------------|-----------------------------|-----------------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|
| 8                               | <sup>1</sup> <sub>5 9</sub>     | 7                           | <sup>1</sup> <sub>4 9</sub>       | <sup>1</sup> <sub>4 9</sub> | 6                           | <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>4 5</sub>   | 2                             |
| <sup>1 2 3</sup> <sub>6 9</sub> | <sup>1 2</sup> <sub>6 9</sub>   | <sup>2 3</sup> <sub>9</sub> | <sup>1 2</sup> <sub>4 7 8 9</sub> | 5                           | <sup>1</sup> <sub>7 8</sub> | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>4 7</sub>   | <sup>1</sup> <sub>3 6</sub>   |
| 4                               | <sup>1 2</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5</sub> | <sup>1 2</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>8</sub>   | <sup>3</sup> <sub>7 8</sub> | 9                             | <sup>1</sup> <sub>5 7</sub>   | <sup>3</sup> <sub>5 6 8</sub> |
| <sup>3</sup> <sub>9</sub>       | <sup>4</sup> <sub>8 9</sub>     | <sup>4</sup> <sub>8</sub>   | <sup>3</sup> <sub>1 5 8</sub>     | 2                           | <sup>1</sup> <sub>5 8</sub> | <sup>1</sup> <sub>3 8</sub>   | 6                             | 7                             |
| <sup>2 3</sup> <sub>5</sub>     | <sup>2</sup> <sub>7 8</sub>     | 1                           | 6                                 | <sup>7 8</sup> <sub>4</sub> | <sup>2 3</sup> <sub>8</sub> | <sup>2 3</sup> <sub>5 9</sub> | <sup>3</sup> <sub>5 9</sub>   |                               |
| <sup>2</sup> <sub>5</sub>       | <sup>2</sup> <sub>7 8</sub>     | 6                           | 3                                 | <sup>1</sup> <sub>7 8</sub> | 9                           | <sup>1 2</sup> <sub>8</sub>   | <sup>1 2</sup> <sub>5</sub>   | 4                             |
| 7                               | <sup>1 2</sup> <sub>4 5</sub>   | <sup>2</sup> <sub>4 5</sub> | <sup>1</sup> <sub>4 5 9</sub>     | 6                           | <sup>1</sup> <sub>5</sub>   | <sup>3</sup> <sub>4</sub>     | <sup>1 2 3</sup> <sub>8</sub> | <sup>1</sup> <sub>3 9</sub>   |
| <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>4 5 6 8</sub> | 9                           | <sup>1</sup> <sub>4 5 7 8</sub>   | <sup>1</sup> <sub>4 8</sub> | <sup>3</sup> <sub>2</sub>   | <sup>6</sup> <sub>7</sub>     | <sup>1</sup> <sub>3 4</sub>   | <sup>1</sup> <sub>3 6</sub>   |
| <sup>1 2</sup> <sub>6</sub>     | 3                               | <sup>2</sup> <sub>4 8</sub> | <sup>1</sup> <sub>4 7 8 9</sub>   | <sup>1</sup> <sub>8 9</sub> | <sup>1</sup> <sub>7 8</sub> | 5                             | <sup>1 2</sup> <sub>4 7</sub> | <sup>1</sup> <sub>6 9</sub>   |

|                                 |                               |                                 |                             |                                   |                                 |                               |                               |                               |
|---------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 7                               | <sup>1 2 3</sup> <sub>9</sub> | 8                               | <sup>1</sup> <sub>6 9</sub> | <sup>2 3</sup> <sub>6 9</sub>     | <sup>1 2 3</sup> <sub>6 9</sub> | 5                             | <sup>1</sup> <sub>3 6</sub>   | 4                             |
| <sup>1 2 3</sup> <sub>9</sub>   | 6                             | 5                               | 4                           | 7                                 | <sup>1 2 3</sup> <sub>8 9</sub> | <sup>2 3</sup> <sub>1 3</sub> | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>8</sub>     |
| <sup>1 2 3</sup> <sub>9</sub>   | 4                             | <sup>1 2 3</sup> <sub>6</sub>   | 5                           | <sup>1 2 3</sup> <sub>8 6 7</sub> | <sup>2 3</sup> <sub>9</sub>     | 9                             | <sup>1</sup> <sub>7 8 6</sub> |                               |
| <sup>3</sup> <sub>4 8 9</sub>   | <sup>3</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>7 9</sub>     | <sup>6</sup> <sub>7 9</sub> | 1                                 | <sup>3</sup> <sub>7 9</sub>     | <sup>4</sup> <sub>6 8</sub>   | 5                             | 2                             |
| <sup>1 2</sup> <sub>4 5</sub>   | <sup>1 2</sup> <sub>5 9</sub> | <sup>1 2</sup> <sub>4 7 9</sub> | 8                           | <sup>2</sup> <sub>6 7 9</sub>     | <sup>2</sup> <sub>6 9</sub>     | <sup>4</sup> <sub>6</sub>     | <sup>1</sup> <sub>4 6</sub>   | 3                             |
| <sup>1 2 3</sup> <sub>8</sub>   | <sup>1 2 3</sup> <sub>8</sub> | 6                               | 5                           | <sup>2 3</sup> <sub>4</sub>       | 9                               | <sup>1</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>7 8</sub>   |                               |
| <sup>1</sup> <sub>4 6 9</sub>   | <sup>3</sup> <sub>9</sub>     | <sup>1</sup> <sub>4</sub>       | <sup>3</sup> <sub>7 9</sub> | 8                                 | 5                               | <sup>3</sup> <sub>7</sub>     | 2                             | <sup>6</sup> <sub>7 9</sub>   |
| <sup>1 2</sup> <sub>6 8 9</sub> | 7                             | <sup>1 2</sup> <sub>9</sub>     | 3                           | <sup>4</sup> <sub>6 9</sub>       | <sup>1</sup> <sub>6 9</sub>     | <sup>4</sup> <sub>8</sub>     | <sup>4</sup> <sub>6 8</sub>   | 5                             |
| <sup>3</sup> <sub>5 6 8 9</sub> | <sup>3</sup> <sub>5 8 9</sub> | <sup>3</sup> <sub>9</sub>       | 2                           | <sup>4</sup> <sub>6 9</sub>       | <sup>6</sup> <sub>7 9</sub>     | 1                             | <sup>3</sup> <sub>4 7 8</sub> | <sup>6</sup> <sub>7 8 9</sub> |

|                                     |                               |                               |                                 |                                 |                                 |                               |                                 |                                 |
|-------------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|
| <sup>1</sup> <sub>4 5 7</sub>       | <sup>3</sup> <sub>2</sub>     | 9                             | 8                               | <sup>4</sup> <sub>3</sub>       | <sup>1</sup> <sub>4 5</sub>     | 6                             | <sup>1</sup> <sub>4 7</sub>     | <sup>3</sup> <sub>4</sub>       |
| <sup>1</sup> <sub>4 5 6</sub>       | <sup>1</sup> <sub>6</sub>     | 8                             | 7                               | <sup>6</sup> <sub>9</sub>       | <sup>1</sup> <sub>4 5</sub>     | <sup>1</sup> <sub>9</sub>     | 2                               | <sup>3</sup> <sub>4 9</sub>     |
| <sup>1</sup> <sub>4 6 7</sub>       | <sup>1</sup> <sub>6 7</sub>   | <sup>3</sup> <sub>4</sub>     | <sup>2</sup> <sub>6</sub>       | <sup>2</sup> <sub>6 4</sub>     | <sup>1</sup> <sub>3 9</sub>     | <sup>1</sup> <sub>7 8 9</sub> | 5                               | <sup>3</sup> <sub>4 7 8 9</sub> |
| <sup>1 2</sup> <sub>7</sub>         | <sup>1</sup> <sub>7</sub>     | 5                             | 9                               | 8                               | 6                               | 3                             | <sup>1</sup> <sub>4 7</sub>     | <sup>2</sup> <sub>4 7</sub>     |
| <sup>8 9</sup> <sub>4</sub>         | <sup>7</sup> <sub>3</sub>     | <sup>5</sup> <sub>1</sub>     | 2                               | <sup>7 8 9</sup> <sub>5</sub>   | <sup>7 8 9</sup> <sub>1</sub>   | 6                             | <sup>2</sup> <sub>7 8 9</sub>   |                                 |
| <sup>6</sup> <sub>8 9</sub>         | <sup>6</sup> <sub>8 9</sub>   | <sup>1 2 3</sup> <sub>4</sub> | <sup>5</sup> <sub>3</sub>       | 7                               | <sup>1 2</sup> <sub>5 8 9</sub> | <sup>1</sup> <sub>5 8 9</sub> | <sup>2</sup> <sub>5 8 9</sub>   |                                 |
| <sup>4</sup> <sub>7 8</sub>         | <sup>2 3</sup> <sub>7 8</sub> | 6                             | <sup>2 3</sup> <sub>5</sub>     | <sup>2 3</sup> <sub>4 5 7</sub> | 9                               | <sup>2</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7 8</sub>     | 1                               |
| <sup>1 2 3</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>7 9</sub>   | <sup>1 2</sup> <sub>7</sub>   | <sup>1 2 3</sup> <sub>5 6</sub> | <sup>2 3</sup> <sub>7 5 6</sub> | 8                               | 4                             | <sup>3</sup> <sub>7 9</sub>     | <sup>2 3</sup> <sub>5 9</sub>   |
| <sup>1 2 3</sup> <sub>4 7 8 9</sub> | 5                             | <sup>1 2</sup> <sub>4 7</sub> | <sup>1 2 3</sup> <sub>4 7</sub> | <sup>2 3</sup> <sub>4</sub>     | <sup>3</sup> <sub>7 8 9</sub>   | 6                             | <sup>2 3</sup> <sub>7 8 9</sub> |                                 |

|                                 |                               |                                 |                               |                             |                                 |                                 |                                 |                                 |
|---------------------------------|-------------------------------|---------------------------------|-------------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 4                               | <sup>1</sup> <sub>4 6 9</sub> | 2                               | <sup>4</sup> <sub>6 9 7</sub> | 5                           | 8                               | 3                               | <sup>1</sup> <sub>7 9</sub>     |                                 |
| 7                               | <sup>1</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>4 8 9</sub>   | <sup>3</sup> <sub>2</sub>     | <sup>1</sup> <sub>8 9</sub> | <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>5 9</sub>     |                                 |
| <sup>3</sup> <sub>5 8 9</sub>   | <sup>1</sup> <sub>5 6</sub>   | <sup>3</sup> <sub>5 6 8 9</sub> | <sup>3</sup> <sub>6 7 8</sub> | <sup>1</sup> <sub>8 9</sub> | <sup>1 2</sup> <sub>5 6 7</sub> | 4                               | <sup>1 2</sup> <sub>5 7 9</sub> |                                 |
| <sup>4 5</sup> <sub>9</sub>     | <sup>4 5 6</sup> <sub>1</sub> | 2                               | <sup>4</sup> <sub>8 9</sub>   | 7                           | <sup>5 6</sup> <sub>8</sub>     | <sup>5 6</sup> <sub>5</sub>     | <sup>3</sup> <sub>5</sub>       |                                 |
| <sup>2 3</sup> <sub>4</sub>     | <sup>2</sup> <sub>7</sub>     | <sup>3</sup> <sub>4 6</sub>     | 5                             | <sup>4</sup> <sub>8</sub>   | <sup>4</sup> <sub>8 6</sub>     | 9                               | <sup>1 2</sup> <sub>7 8</sub>   | <sup>1 2 3</sup> <sub>6 7</sub> |
| <sup>2</sup> <sub>5 9</sub>     | 8                             | <sup>5 6</sup> <sub>7 9</sub>   | 1                             | <sup>6</sup> <sub>9</sub>   | 3                               | 4                               | <sup>2</sup> <sub>5 6 7</sub>   |                                 |
| <sup>1 2</sup> <sub>5</sub>     | 9                             | <sup>5</sup> <sub>7</sub>       | 8                             | <sup>1</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>6</sub>     | <sup>1 2 3</sup> <sub>5 7</sub> | <sup>1 2</sup> <sub>5 7</sub>   | 4                               |
| 6                               | <sup>2</sup> <sub>7</sub>     | <sup>4</sup> <sub>7</sub>       | <sup>3</sup> <sub>4 9</sub>   | 5                           | <sup>1 2</sup> <sub>4 9</sub>   | <sup>1 2 3</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>7 9</sub>   | 8                               |
| <sup>1 2</sup> <sub>4 5 8</sub> | 3                             | <sup>4 5</sup> <sub>8</sub>     | 7                             | <sup>1</sup> <sub>4</sub>   | <sup>1 2</sup> <sub>4 9</sub>   | <sup>1 2</sup> <sub>5 9</sub>   | <sup>1 2</sup> <sub>5 9</sub>   | 6                               |

|                             |                               |                               |                                 |                                     |                                 |                                 |                               |                                 |
|-----------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|
| 6                           | 3                             | <sup>2</sup> <sub>5</sub>     | 8                               | <sup>2</sup> <sub>4 7 9</sub>       | <sup>2</sup> <sub>4 5 9</sub>   | <sup>2</sup> <sub>5</sub>       | 1                             | <sup>2</sup> <sub>4 5 9</sub>   |
| <sup>2</sup> <sub>4 8</sub> | 9                             | 7                             | <sup>3</sup> <sub>4 5 6</sub>   | <sup>1 2 3</sup> <sub>4 6 4 5</sub> | <sup>1 2 3</sup> <sub>4 5</sub> | <sup>2</sup> <sub>5 6 8</sub>   | <sup>2</sup> <sub>4 5 8</sub> | <sup>2</sup> <sub>4 5 8</sub>   |
| <sup>2</sup> <sub>4 8</sub> | <sup>1 2</sup> <sub>5 8</sub> | <sup>1 2</sup> <sub>5 8</sub> | <sup>4 5 6</sup> <sub>7 9</sub> | <sup>4</sup> <sub>7 9</sub>         | <sup>2</sup> <sub>6 4 5</sub>   | <sup>2</sup> <sub>5 6 7 8</sub> | 3                             | <sup>2</sup> <sub>4 5 8 9</sub> |
| <sup>7</sup> <sub>9</sub>   | <sup>2</sup> <sub>5 8</sub>   | <sup>2 3</sup> <sub>8</sub>   | 1                               | <sup>4</sup> <sub>7 8 9</sub>       | <sup>2 3</sup> <sub>4 8 9</sub> | <sup>2</sup> <sub>5 8 9</sub>   | <sup>2</sup> <sub>4 5 9</sub> | 6                               |
| 1                           | <sup>2</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>6 8</sub> | <sup>3</sup> <sub>4 7 9</sub>   | 5                                   | <sup>2 3</sup> <sub>4 8 9</sub> | <sup>2</sup> <sub>8</sub>       | <sup>2 3</sup> <sub>4 8</sub> |                                 |
| <sup>7</sup> <sub>9</sub>   | 4                             | <sup>2 3</sup> <sub>5 8</sub> | <sup>3</sup> <sub>7 9</sub>     | 6                                   | <sup>2 3</sup> <sub>7 8 9</sub> | 1                               | <sup>2</sup> <sub>5 8</sub>   | <sup>2 3</sup> <sub>5 8</sub>   |
| 5                           | 7                             | <sup>8 9</sup> <sub>4</sub>   | 2                               | <sup>4</sup> <sub>8 9</sub>         | <sup>4</sup> <sub>8 9</sub>     | 3                               | 6                             | 1                               |
| <sup>2</sup> <sub>8</sub>   | <sup>1 2</sup> <sub>8</sub>   | 4                             | <sup>3</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>8</sub>           | <sup>3</sup> <sub>6 5 8</sub>   | 9                               | <sup>2</sup> <sub>5</sub>     | 7                               |
| 3                           | <sup>1 2</sup> <sub>6 9</sub> | <sup>1 2</sup> <sub>6 9</sub> | <sup>5 6</sup> <sub>9</sub>     | <sup>1</sup> <sub>6 9</sub>         | 7                               | 4                               | 8                             | <sup>2</sup> <sub>5</sub>       |

|                               |                                 |                                   |                               |                               |                               |                             |                                 |                               |
|-------------------------------|---------------------------------|-----------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|---------------------------------|-------------------------------|
| 3                             | <sup>2</sup> <sub>4 7 8</sub>   | <sup>2</sup> <sub>7 8</sub>       | <sup>5</sup> <sub>7 8</sub>   | 6                             | <sup>4 5</sup> <sub>8</sub>   | 1                           | <sup>2</sup> <sub>5</sub>       | 9                             |
| 6                             | 5                               | <sup>1</sup> <sub>8</sub>         | 2                             | 9                             | <sup>1</sup> <sub>8</sub>     | <sup>3</sup> <sub>4 7</sub> | <sup>3</sup> <sub>4 7</sub>     | <sup>3</sup> <sub>4</sub>     |
| <sup>1 2</sup> <sub>7</sub>   | <sup>2</sup> <sub>4 7 9</sub>   | <sup>1 2</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>5 7</sub>   | <sup>1</sup> <sub>4 5</sub>   | 3                             | <sup>2</sup> <sub>6</sub>   | <sup>2</sup> <sub>5 6</sub>     | 8                             |
| 8                             | 1                               | <sup>2 3</sup> <sub>6</sub>       | <sup>6</sup> <sub>9</sub>     | 7                             | <sup>4</sup> <sub>6 9</sub>   | 5                           | <sup>2 3</sup> <sub>4 6 4</sub> | <sup>2 3</sup> <sub>2 3</sub> |
| <sup>2</sup> <sub>7</sub>     | <sup>2</sup> <sub>6</sub>       | 4                                 | 3                             | <sup>1</sup> <sub>5 8</sub>   | <sup>1</sup> <sub>5 8</sub>   | 9                           | <sup>1 2</sup> <sub>8 6</sub>   | <sup>1 2</sup> <sub>6</sub>   |
| 9                             | <sup>3</sup> <sub>6</sub>       | 5                                 | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>6 4</sub>   | 2                             | <sup>3</sup> <sub>4 6</sub> | <sup>1</sup> <sub>4 6</sub>     | 7                             |
| <sup>1 2</sup> <sub>5 7</sub> | <sup>2</sup> <sub>7 8</sub>     | <sup>1 2</sup> <sub>7 8</sub>     | 4                             | 3                             | <sup>1</sup> <sub>5 8</sub>   | <sup>2</sup> <sub>7</sub>   | 9                               | <sup>1 2</sup> <sub>5</sub>   |
| <sup>1 2</sup> <sub>5</sub>   | <sup>2 3</sup> <sub>8 9</sub>   | <sup>1 2 3</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>5 8 9</sub> | <sup>1 2</sup> <sub>5 8</sub> | 7                             | <sup>2 3</sup> <sub>4</sub> | <sup>1 2 3</sup> <sub>4</sub>   | 6                             |
| 4                             | <sup>2 3</sup> <sub>6 7 9</sub> | <sup>1 2 3</sup> <sub>6 7 9</sub> | <sup>1</sup> <sub>5 6 9</sub> | <sup>1 2</sup> <sub>5</sub>   | <sup>1</sup> <sub>5 6 9</sub> | 8                           | <sup>1 2 3</sup> <sub>7</sub>   | <sup>1 2 3</sup> <sub>5</sub> |

|            |            |          |               |              |          |                   |                   |            |
|------------|------------|----------|---------------|--------------|----------|-------------------|-------------------|------------|
| 1          | 2 3<br>5   | 2<br>9 7 | 4 5 6<br>7 9  | 2 3<br>4 6 9 | 2<br>7 6 | 2 3<br>4 5 6<br>9 | 8                 | 2 3<br>4 5 |
| 2 3<br>5 8 | 2 3<br>5 8 | 4        | 3<br>5 6<br>7 | 2 3<br>6     | 1        | 2 3<br>5 6<br>7   | 9                 | 2 3<br>5   |
| 2 3<br>5 9 | 6          | 2<br>7 9 | 3<br>4 5 9    | 8            | 2<br>7 9 | 2 3<br>4 5<br>7   | 2 3<br>4 5        | 1          |
| 2 5 6<br>9 | 1          | 3        | 4 6<br>9      | 7            | 2 6<br>9 | 8                 | 2 3<br>4 5 6<br>9 | 4 5        |
| 2 6<br>9   | 4 2<br>9   | 8        | 4 3<br>6 9    | 2 3<br>4 6 9 | 5        | 1                 | 2 3<br>4 6        | 7          |
| 7          | 2 4<br>5 9 | 2<br>9   | 1             | 2 3<br>4 6 9 | 8        | 2 3<br>4 5<br>7   | 2 3<br>4 5 6<br>9 | 2 3<br>4 5 |
| 2<br>9 7   | 2<br>9     | 1        | 6<br>7 9      | 6<br>9       | 3        | 4 5<br>7 8        | 4 5               | 8          |
| 3<br>8     | 3<br>8     | 5        | 2             | 1            | 4        | 9                 | 7                 | 6          |
| 4          | 7 9        | 6        | 8             | 5            | 7 9      | 2 3<br>7 8        | 1                 | 2 3        |

|            |                 |              |                |                |            |            |            |          |
|------------|-----------------|--------------|----------------|----------------|------------|------------|------------|----------|
| 1 2<br>6 9 | 1<br>4 6<br>9   | 8            | 1 2<br>4       | 1 2<br>4 6     | 5          | 3<br>7     | 3 1<br>7   | 6        |
| 3          | 1<br>4 5 6<br>7 | 2<br>4 6     | 1 2<br>4 8     | 9              | 7          | 2<br>5     | 2<br>4 5   | 1<br>8 6 |
| 1 2<br>6   | 1<br>4 5 6      | 7            | 1 2<br>4 8     | 1 2<br>4 6 8   | 1<br>4 6   | 2<br>5 9   | 2<br>4 5 9 | 1<br>8 6 |
|            | 2               | 1            | 6              | 4 3<br>4       | 3          | 5<br>7 9   | 8          | 5<br>9   |
| 7 9        | 6 4<br>7 8 9    | 6 4<br>7 8 9 | 6<br>9         | 5<br>8         | 5<br>7 8   | 2          | 1<br>7 9   | 3<br>6 9 |
| 5          | 3<br>7 8        | 3<br>6       | 1<br>6         | 1<br>8         | 9          | 4<br>7     | 6          | 2        |
| 1<br>7 8   | 1<br>7 8        | 2 3<br>9     | 1 2<br>4 5 8 9 | 1 2 3<br>4 5 8 | 1 3<br>4 8 | 6          | 2 3<br>5 9 | 4 5<br>9 |
| 2<br>6 9   | 3<br>6 9        | 5            | 7              | 2 3<br>4 6     | 3<br>4 6   | 8          | 1<br>4     | 9        |
| 4          | 1<br>8          | 2 3<br>6 9   | 1 2<br>5 8 9   | 1 2 3<br>5 6 8 | 1 3<br>6 8 | 2 3<br>5 9 | 2 3<br>5 9 | 7        |

|              |              |            |              |          |              |              |            |          |
|--------------|--------------|------------|--------------|----------|--------------|--------------|------------|----------|
| 1 3<br>4 8   | 1 3<br>4     | 2          | 1 3<br>5 6 8 | 3<br>5 6 | 9            | 1 5 6<br>8   | 1 5 6<br>8 | 7        |
| 1<br>4 7 8 9 | 1<br>4 7 9   | 6          | 1 2<br>5 8   | 2<br>5   | 1<br>4 7 8   | 1 2<br>4 5 8 | 3<br>4 8   | 2        |
| 5            | 1 3<br>4 7   | 1<br>4 7 8 | 1 2 3<br>6 8 | 2 3<br>6 | 1<br>4 6 7 8 | 1 2<br>4 8   | 1 2<br>6 8 | 9        |
| 4 3<br>7     | 4 3<br>7     | 9          | 5 3<br>8     | 1<br>5   | 2<br>6       | 6<br>7 8     | 5 4<br>8   | 3        |
| 1 3<br>7 6   | 8            | 1<br>7 5   | 3<br>5 6     | 4        | 7 6          | 2 3<br>5     | 9          | 2 3      |
| 2            | 4 3<br>7 7   | 4 5<br>7   | 3 3<br>8 9 7 | 5 6<br>9 | 6 7 8        | 4 5<br>7 8   | 5<br>7 8   | 1        |
| 1<br>7 8     | 1 2<br>7     | 1<br>7 8   | 4            | 2<br>6   | 3            | 9            | 1 2<br>7 8 | 5        |
| 1<br>4 9     | 1 2<br>4 6 9 | 1<br>4     | 7            | 8        | 5            | 1 2 3<br>1 2 | 2 3<br>6   |          |
| 6<br>7 8     | 5            | 3          | 1 2<br>6 9   | 2<br>6 9 | 1<br>6       | 2<br>7 8     | 4          | 2 6<br>8 |

|              |            |          |            |                |            |              |              |                |
|--------------|------------|----------|------------|----------------|------------|--------------|--------------|----------------|
| 1<br>4 8 9   | 4<br>7 9   | 4<br>7 8 | 5          | 1<br>4 8       | 3          | 6            | 4<br>8 9     | 2              |
| 1<br>4 8     | 3          | 2        | 6          | 9              | 1<br>4 8   | 7            | 5            | 1<br>4 8       |
| 1<br>4 6 8 9 | 5          | 4 6      | 7          | 2              | 1<br>4 8   | 1<br>4 8     | 3<br>4 8 9   | 1<br>3 8 9     |
| 7            | 4 6        | 9        | 1<br>4 8   | 1 3<br>4 5 6 8 | 2          | 1 5<br>4 8   | 3<br>4 8     | 1 3<br>4 5 6 8 |
| 2<br>4 6     | 1          | 5 3      | 4<br>8     | 3<br>4 5 6 8   | 9          | 2 3<br>4 7 8 | 3<br>4 5 6 8 |                |
| 4 2<br>6     | 8          | 5 3      | 9          | 1 3<br>4 5 6 7 | 1<br>4 5   | 1 2<br>4 5   | 2 3<br>4     | 1 3<br>4 5 6   |
| 4<br>8 9     | 4<br>7 9   | 4<br>7 8 | 1 2<br>4 8 | 1<br>4 5 8     | 6          | 3            | 2<br>4 8 9   | 4 5<br>8 9     |
| 3            | 4 2<br>9   | 1        | 4<br>8     | 2<br>4 5 8     | 4 5<br>8 9 | 2<br>4 8     | 6            | 7              |
| 5            | 4 2<br>6 9 | 4 6      | 3          | 7              | 4 8 9      | 4<br>8       | 1            | 4 8 9          |

|            |            |            |              |              |            |              |                  |              |
|------------|------------|------------|--------------|--------------|------------|--------------|------------------|--------------|
| 1          | 4 5<br>8   | 3<br>4     | 2 3<br>5 6   | 2 3<br>5 6   | 7          | 2 3<br>5 6   | 2 6<br>4 5 6 8 9 | 4 5 6<br>8 9 |
| 2<br>5 7 8 | 3<br>5 7 8 | 2 3<br>7   | 1 2 3<br>5 6 | 4            | 9          | 2<br>6 7 8   | 5 6<br>7 8       | 1<br>5 6     |
| 9          | 4 5<br>7   | 6          | 1 2<br>5     | 8            | 1 2<br>5   | 4<br>7       | 3<br>4 5         |              |
| 4 5 6      | 1          | 4 3        | 2 3<br>5     | 9            | 2 3<br>5 8 | 4 3<br>6 8   | 4 6<br>8         | 7            |
| 4 6<br>7   | 2          | 4 3<br>7 9 | 1 3<br>7     | 1 3<br>7     | 1 3<br>7 8 | 5            | 4 6<br>8 9       | 3<br>6 9     |
| 5<br>7     | 5 3<br>7 9 | 8          | 4            | 6            | 5 3<br>7   | 1            | 2                | 3<br>9       |
| 4 2<br>7   | 6          | 1          | 8            | 2 5<br>4 7   | 3<br>4 7   | 4 3<br>7 9   | 4 5<br>7 9       | 3            |
| 3          | 4<br>7 9   | 4 2<br>7 9 | 1<br>7 9     | 2 5<br>4 7   | 1<br>4 6 7 | 4 6<br>7     | 1 5 6<br>4 5 6 7 | 8            |
| 4<br>7 8   | 4<br>7 8 9 | 5          | 1 3<br>7 9   | 1 3<br>4 6 7 | 1 3<br>4 6 | 3 1<br>4 6 7 | 4 6<br>7         | 2            |

|            |            |            |            |              |              |              |                |            |
|------------|------------|------------|------------|--------------|--------------|--------------|----------------|------------|
| 1          | 2<br>5 9   | 3<br>5 8 9 | 6          | 2<br>4 5 8   | 2<br>4 8     | 3<br>7 8     | 3<br>5 7 8 9   | 3<br>5 7 8 |
| 2<br>6 8   | 7          | 5 6<br>8   | 3          | 2<br>5 8     | 9            | 1<br>5 6 8   | 4              | 1<br>5 8   |
| 3<br>6 8 9 | 5 6<br>9   | 4          | 1<br>5 8   | 7            | 1<br>8       | 3<br>5 6 8   | 3<br>5 6 8 9   | 2          |
| 4 2<br>6 8 | 1          | 6 8        | 7          | 2 5 6<br>8   | 2 3<br>4 8   | 3<br>4 5 8   | 5 3<br>8       | 9          |
| 4 6<br>8 9 | 3          | 7          | 1<br>4 5 8 | 4 5 6<br>8 9 | 1<br>4 6     | 2<br>5 8     | 1<br>4 5 8     |            |
| 5          | 4 2<br>9   | 8 9        | 1 2<br>4 8 | 4<br>8 9     | 1 2 3<br>4 8 | 1 3<br>4 7 8 | 1 3<br>7 8     | 6          |
| 4 3<br>6 4 | 6          | 1          | 4 2<br>8   | 2 6<br>4 8   | 5            | 9            | 2 3<br>6 4 7 8 | 3          |
| 4 6<br>9   | 4 5 6<br>9 | 2          | 4<br>8 9   | 3 7          | 1<br>4 5 6 8 | 1<br>8       | 5 6<br>8       | 1<br>4 5 8 |
| 7          | 8          | 3 5 6<br>9 | 4 2<br>9   | 1            | 2 6<br>4 5 6 | 3<br>5 6     | 2 3<br>5 6     | 3<br>4 5   |

|                           |                               |  |   |                             |   |   |   |  |
|---------------------------|-------------------------------|--|---|-----------------------------|---|---|---|--|
| 1                         | <sup>2 3</sup> <sub>5 6</sub> | <sup>2 3</sup> <sub>4 5</sub>          | <sup>2 3</sup> <sub>4 6</sub> <sup>9</sup>  | 7                           | <sup>2</sup> <sub>9</sub>   | <sup>2</sup> <sub>5 6</sub> <sup>9</sup>  | 8 | <sup>2</sup> <sub>5</sub> <sup>9</sup> |
| 9                         | 7                             | <sup>2</sup> <sub>4 5</sub>            | <sup>2</sup> <sub>4 6</sub> <sup>4 6</sup>  | 8                           | <sup>2</sup> <sub>5 6</sub>   | 3   | 1 |  |
| 8                         | <sup>2 3</sup> <sub>6</sub>   | <sup>2 3</sup> <sub>6</sub>            | <sup>2 3</sup> <sub>6</sub> <sup>9</sup>  | 5                           | 1   | 4   | 7 | <sup>2</sup> <sub>9</sub>              |
| 5                         | <sup>3</sup> <sub>9</sub>     | 7                                      | <sup>1 2</sup> <sub>9</sub> <sup>1 3</sup> <sub>8</sub> <sup>2</sup> <sub>9</sub> |                             | <sup>1 2 3</sup> <sub>8 9</sub>   | 4   | 6 |  |
| 6                         | 4                             | <sup>3</sup> <sub>8 9</sub>            | <sup>1 2</sup> <sub>5</sub> <sup>1 3</sup> <sub>8</sub>                           | 7                           | <sup>1 2 3</sup> <sub>5 8</sub> <sup>1 2</sup> <sub>5</sub> <sup>3</sup> <sub>8</sub> |   |   |  |
| 2                         | 1                             | <sup>3</sup> <sub>8 9</sub>            | <sup>5 6</sup> <sub>9</sub> <sup>3</sup> <sub>8</sub>                             | 4                           | <sup>5</sup> <sub>8 9</sub> <sup>5</sup> <sub>9</sub>                                 | 7   |   |  |
| <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>5</sub>     | 1                                      | <sup>7 8</sup> <sub>9</sub>   | 9                           | <sup>3</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5 6</sub> <sup>4</sup> <sub>8</sub>                           |   |  |
| <sup>4</sup> <sub>7</sub> | <sup>5</sup> <sub>9</sub>     | 6                                      | <sup>7 8</sup> <sub>9</sub>   | 2                           | <sup>5</sup> <sub>9</sub>   | <sup>1 3</sup> <sub>8 9</sub> <sup>1</sup> <sub>5</sub> <sup>4</sup> <sub>8</sub> |   |  |
| 3                         | 8                             | <sup>2</sup> <sub>5</sub> <sup>9</sup> | <sup>1</sup> <sub>4</sub> <sup>1</sup> <sub>4</sub>                               | <sup>5 6</sup> <sub>9</sub> | 7   | <sup>2</sup> <sub>5 6</sub> <sup>2</sup> <sub>5</sub> <sup>9</sup>                |   |  |

|   |   |   |   |  |  |  |   |   |
|---|---|---|---|--|--|--|---|---|
| 9   | <sup>5</sup> <sub>7 8</sub>                           | <sup>2</sup> <sub>5</sub>                             | 4   | <sup>2</sup> <sub>5 6</sub> <sup>8</sup>                               | 1  | <sup>2 3</sup> <sub>5</sub> <sup>3</sup> <sub>6</sub> <sup>3</sup> <sub>5 8</sub>              |   |   |
| <sup>1</sup> <sub>4 5</sub> <sup>8</sup>            | 3   | <sup>1 2</sup> <sub>4 5</sub>                         | 7   | <sup>2</sup> <sub>5 6</sub> <sup>2</sup> <sub>8 9</sub>                | <sup>2</sup> <sub>5 6</sub> <sup>2</sup> <sub>8 9</sub>              | <sup>2</sup> <sub>5</sub> <sup>4</sup> <sub>8 9</sub> <sup>4</sup> <sub>5 8</sub> <sup>9</sup> |   |   |
| <sup>4 5</sup> <sub>8</sub>                         | 6   | <sup>2</sup> <sub>4 5</sub>                           | 3   | <sup>2</sup> <sub>5</sub> <sup>2</sup> <sub>8 9</sub>                  | <sup>2</sup> <sub>5</sub> <sup>2</sup> <sub>8 9</sub>                | 7  | <sup>4</sup> <sub>8 9</sub>                         | 1   |
| 2   | <sup>1</sup> <sub>4 5</sub> <sup>7</sup> <sub>9</sub> | <sup>1</sup> <sub>4 5</sub> <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>5</sub> <sup>1</sup> <sub>4 5</sub> <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>4 5</sub> <sup>3</sup> <sub>9</sub>                  | <sup>3</sup> <sub>5</sub> <sup>3</sup> <sub>9</sub>                  |  | <sup>3</sup> <sub>7 8 9</sub>                       | 6   |
| <sup>4 5 6</sup> <sub>9</sub>                       | <sup>4 5</sup> <sub>9</sub>                           | <sup>4 5 6</sup> <sub>9</sub>                         | <sup>3</sup> <sub>8</sub>   | <sup>3</sup> <sub>4 5 6</sub> <sup>3</sup> <sub>8</sub>                | <sup>3</sup> <sub>4 5 6</sub> <sup>3</sup> <sub>8</sub>              | 7  | 1   | <sup>2</sup> <sub>8 9</sub> <sup>3</sup> <sub>9</sub> |
| <sup>1</sup> <sub>7</sub> <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>7</sub> <sup>9</sup>                | 8   | <sup>1</sup> <sub>6</sub>   | <sup>1 2 3</sup> <sub>6</sub> <sup>2 3</sup> <sub>6</sub> <sup>9</sup> | <sup>2 3</sup> <sub>6</sub> <sup>2 3</sup> <sub>6</sub> <sup>9</sup> | 4  | 5   | <sup>3</sup> <sub>7 9</sub>                           |
| <sup>1</sup> <sub>5 6</sub>                         | 2   | 9   | <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>5 6</sub> <sup>3</sup> <sub>5 6</sub>                | <sup>3</sup> <sub>5 6</sub> <sup>3</sup> <sub>5 6</sub>              | 4  | 8   | <sup>3</sup> <sub>7</sub> <sup>5</sup> <sub>7</sub>   |
| <sup>4 5 6</sup> <sub>7 8</sub>                     | <sup>4 5</sup> <sub>7 8</sub>                         | <sup>4 5 6</sup> <sub>7</sub>                         | 9   | <sup>5 6</sup> <sub>7 8</sub> <sup>5 6</sup> <sub>8</sub>              | <sup>5 6</sup> <sub>8</sub> <sup>5 6</sup> <sub>8</sub>              | <sup>5</sup> <sub>3</sub>  | 1   | 2   |
| 3   | <sup>1</sup> <sub>7 8</sub> <sup>5</sup> <sub>7</sub> | <sup>1</sup> <sub>5</sub>                             | 2   | <sup>1</sup> <sub>7 8</sub> <sup>5</sup> <sub>8</sub>                  | <sup>5</sup> <sub>8</sub> <sup>5</sup> <sub>8</sub>                  | 6  | <sup>4</sup> <sub>9</sub> <sup>4</sup> <sub>9</sub> |   |

|   |   |                             |   |   |   |   |                           |   |
|---|---|-----------------------------|---|---|---|---|---------------------------|---|
| 9   | <sup>5 6</sup> <sub>7 8</sub>                             | <sup>5</sup> <sub>7 8</sub> | 3   | <sup>6</sup> <sub>7 8</sub>   | 1   | <sup>2</sup> <sub>7 8</sub> <sup>2</sup> <sub>8</sub> | 4                         |   |
| 1   | <sup>3</sup> <sub>4 7</sub> <sup>3</sup> <sub>7 8</sub>   | <sup>4</sup> <sub>7</sub>   | 2   | <sup>6</sup> <sub>7 8</sub>   | <sup>6</sup> <sub>7 8 9</sub> <sup>6</sup> <sub>8 9</sub>                                 | 5   |                           |   |
| <sup>4</sup> <sub>7 8</sub>                           | <sup>4</sup> <sub>7</sub> <sup>6</sup> <sub>7</sub>       | 2                           | <sup>4 5</sup> <sub>7</sub>                         | 9   | <sup>5 6</sup> <sub>7 8</sub>   | 3   | <sup>6</sup> <sub>8</sub> | 1 |
| 2   | <sup>1</sup> <sub>4 5</sub> <sup>4 5</sup> <sub>7 8</sub> | 6                           | <sup>4</sup> <sub>7 8</sub>                         | 9   | <sup>4</sup> <sub>8</sub> <sup>1</sup> <sub>5</sub> <sup>8</sup> <sub>8</sub>             | 3   |                           |   |
| 6   | <sup>1</sup> <sub>4 7</sub> <sup>3</sup> <sub>7</sub>     | 9                           | <sup>1 2</sup> <sub>7</sub>                         | 5   | <sup>2 3</sup> <sub>7 8</sub> <sup>4</sup> <sub>8</sub> <sup>8</sup> <sub>7 8</sub>       |   |                           |   |
| <sup>5</sup> <sub>7 8</sub> <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>4 5</sub> <sup>3</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>7</sub>                         | <sup>3</sup> <sub>7 8</sub>   | <sup>2 3</sup> <sub>7 8</sub> <sup>2</sup> <sub>8 9</sub> <sup>1 2</sup> <sub>7 8 9</sub> |   |                           |   |
| 4   | 8   | <sup>1</sup> <sub>5 6</sub> | 9   | <sup>3</sup> <sub>6</sub> <sup>2 3</sup> <sub>5 6</sub>                                 | <sup>1 2</sup> <sub>5 6</sub> <sup>2</sup> <sub>6</sub>                                   | 7   |                           |   |
| <sup>3</sup> <sub>5</sub>                             | <sup>2</sup> <sub>9</sub> <sup>1</sup> <sub>5 6</sub>     | <sup>3</sup> <sub>7</sub>   | <sup>2</sup> <sub>7</sub> <sup>3</sup> <sub>7</sub> | <sup>2 3</sup> <sub>5 6</sub> <sup>1 2</sup> <sub>8 9</sub> <sup>2</sup> <sub>8 9</sub> | <sup>4</sup> <sub>8 9</sub>   |   |                           |   |
| <sup>5</sup> <sub>7</sub>                             | <sup>2</sup> <sub>9</sub> <sup>5 6</sup> <sub>7</sub>     | 8                           | 1   | 4   | <sup>2</sup> <sub>5 6</sub> <sup>2</sup> <sub>6</sub>                                     | 3   |                           |   |

|   |   |   |   |   |   |   |   |  |
|---|---|---|---|---|---|---|---|--|
| 1   | 5   | <sup>2 3</sup> <sub>6 9</sub> <sup>4</sup> <sub>8</sub>                             | 7   | <sup>2</sup> <sub>4 6</sub> <sup>2</sup> <sub>8</sub>       | <sup>2</sup> <sub>8</sub> <sup>3</sup> <sub>6</sub> <sup>2 3</sup> <sub>8</sub>     |   |   |  |
| <sup>2</sup> <sub>7</sub>                             | <sup>3</sup> <sub>6</sub> <sup>2 3</sup> <sub>6</sub> | <sup>1</sup> <sub>5</sub> <sup>1 2</sup> <sub>8</sub> <sup>1 2</sup> <sub>5 6</sub> | 9   | 4   | <sup>2 3</sup> <sub>7 8</sub> <sup>2 3</sup> <sub>6</sub>                           |   |   |  |
| 4   | 8   | <sup>2</sup> <sub>7 9</sub>   | 3   | <sup>2</sup> <sub>6 9</sub>                                 | <sup>1</sup> <sub>5</sub> <sup>1</sup> <sub>5</sub> <sup>2</sup> <sub>6</sub>       |   |   |  |
| <sup>1</sup> <sub>7 9</sub>                           | <sup>1</sup> <sub>4</sub> <sup>1</sup> <sub>9</sub>   | <sup>1</sup> <sub>4</sub>   | 3   | 8   | 6   | 2   | 5 |  |
| 6   | <sup>1</sup> <sub>4</sub>                             | <sup>5</sup> <sub>8</sub>   | 2   | <sup>1</sup> <sub>4 5</sub> <sup>1</sup> <sub>4 5</sub>     | <sup>1</sup> <sub>4</sub> <sup>1</sup> <sub>7 8</sub> <sup>1</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>4</sub> <sup>3</sup> <sub>8 9</sub>   |   |  |
| 3   | 2   | <sup>5</sup> <sub>8</sub>   | 7   | <sup>1</sup> <sub>4 5 6</sub> <sup>1</sup> <sub>4 5 6</sub> | <sup>1</sup> <sub>4</sub> <sup>1</sup> <sub>8 9</sub> <sup>4</sup> <sub>8 9</sub>   |   |   |  |
| <sup>2</sup> <sub>5</sub> <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>6</sub> <sup>1 2</sup> <sub>6</sub> | 9   | <sup>1 2</sup> <sub>4 5</sub> <sup>1 2</sup> <sub>8</sub> | <sup>1 2</sup> <sub>4 5</sub> <sup>2</sup> <sub>7 8</sub>   | 3   | <sup>5 6</sup> <sub>7 8</sub> <sup>4</sup> <sub>8</sub> |   |  |
| <sup>2</sup> <sub>5</sub> <sup>1</sup> <sub>8 9</sub> | <sup>3</sup> <sub>9</sub>                             | 4   | 6   | <sup>1 2</sup> <sub>5</sub> <sup>1 2</sup> <sub>7</sub>     | <sup>2</sup> <sub>7 8</sub> <sup>5</sup> <sub>7 8 9</sub> <sup>8 9</sup>            |   |   |  |
| <sup>2</sup> <sub>5</sub> <sup>7</sup> <sub>8 9</sub> | <sup>2 3</sup> <sub>6</sub>                           | <sup>4 5</sup> <sub>8</sub> <sup>2 3</sup> <sub>4 5</sub>                           | <sup>2</sup> <sub>4 5</sub> <sup>2 3</sup> <sub>4 5</sub> | <sup>2</sup> <sub>4 5</sub> <sup>2</sup> <sub>8</sub>       | <sup>2</sup> <sub>4 5</sub> <sup>5 6</sup> <sub>8 9</sub>                           | 1   |   |  |

|   |   |   |   |   |   |   |  |  |
|---|---|---|---|---|---|---|--|--|
| 1   | <sup>4</sup> <sub>8</sub> <sup>4</sup> <sub>8</sub>       | <sup>2 3</sup> <sub>6</sub> <sup>2</sup> <sub>8</sub>   | 7   | 5   | 9   | <sup>6</sup> <sub>8</sub>                             |  |  |
| <sup>2</sup> <sub>5</sub> <sup>8</sup>                | 7   | <sup>2 3</sup> <sub>5 8</sub>                           | 9   | <sup>1 2</sup> <sub>5 8</sub> <sup>1</sup> <sub>6</sub>                           | 4   | <sup>1 2</sup> <sub>6</sub> <sup>1</sup> <sub>8</sub> |  |  |
| 9   | <sup>5</sup> <sub>8</sub>                                 | 6   | 4   | <sup>1 2</sup> <sub>5 8</sub> <sup>1 2</sup> <sub>7 8</sub>                       | <sup>1 2</sup> <sub>7</sub> <sup>1 2 3</sup> <sub>8</sub> <sup>1</sup> <sub>3</sub> |   |  |  |
| <sup>2</sup> <sub>4 5</sub> <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>4 5</sub> <sup>1 2</sup> <sub>7</sub>   | 8   | <sup>1 2 3</sup> <sub>6</sub> <sup>1 2 3</sup> <sub>9</sub> | <sup>1</sup> <sub>6</sub> <sup>1</sup> <sub>5 6</sub> <sup>1</sup> <sub>5 6</sub> |   |   |  |  |
| 6   | 3   | <sup>1 2</sup> <sub>7</sub> <sup>5</sup> <sub>7</sub>   | <sup>2</sup> <sub>7</sub>                                   | <sup>1 2</sup> <sub>9</sub> <sup>1</sup> <sub>7 8</sub>                           | 4   | <sup>1</sup> <sub>5 8 9</sub>                         |  |  |
| <sup>7 8</sup> <sub>9</sub>                           | <sup>1</sup> <sub>7 8</sub>                               | 5   | 4   | <sup>1</sup> <sub>6</sub>   | 3   | <sup>1</sup> <sub>6</sub> <sup>2</sup> <sub>8 9</sub> |  |  |
| 3   | 2   | <sup>1</sup> <sub>7 8 9</sub> <sup>6</sup> <sub>7</sub> | <sup>5 6</sup> <sub>7 8</sub> <sup>5 6</sup> <sub>8</sub>   | <sup>1</sup> <sub>6</sub> <sup>1</sup> <sub>5 6</sub>                             | 4   |   |  |  |
| <sup>4 5</sup> <sub>7</sub>                           | <sup>1</sup> <sub>4 5 6</sub> <sup>1</sup> <sub>4 5</sub> | 9   | <sup>2 3</sup> <sub>5 6</sub> <sup>2 3</sup> <sub>5 6</sub> | <sup>1 2</sup> <sub>6</sub> <sup>1</sup> <sub>5 6</sub>                           | 8   | <sup>3</sup> <sub>5 6</sub>                           |  |  |
| <sup>5</sup> <sub>8</sub>                             | <sup>5 6</sup> <sub>8</sub> <sup>5</sup> <sub>8 9</sub>   | 1   | <sup>2 3</sup> <sub>5 6</sub> <sup>2 3</sup> <sub>8</sub>   | <sup>2</sup> <sub>6</sub> <sup>2 3</sup> <sub>5 6</sub>                           | 7   |   |  |  |

|   |   |  |   |   |   |   |                           |   |
|---|---|--|---|---|---|---|---------------------------|---|
| <sup>7 8</sup> <sub>1 2</sub> <sup>7 8</sup> <sub>4 5</sub> | <sup>2</sup> <sub>4 5</sub> <sup>1 2</sup> <sub>4 5</sub> | 6  | 4   | 3   | 9   | 5   | 2                         | 1 |
| <sup>1 2</sup> <sub>4 5</sub>                               | <sup>2</sup> <sub>4 5</sub> <sup>1 2</sup> <sub>4 5</sub> | 7  | <sup>2</sup> <sub>5</sub>                             | 8   | 3   | 9   | 6                         |   |
| 9   | <sup>2</sup> <sub>5</sub>                                 | 3  | <sup>2</sup> <sub>6</sub> <sup>2</sup> <sub>5 6</sub> | 1   | 8   | 4   | 7                         |   |
| <sup>2</sup> <sub>4</sub>                                   | <sup>8 9</sup> <sub>7</sub>                               | 7  | <sup>1</sup> <sub>8 9</sub>                           | 3   | 6   | 5   | <sup>2</sup> <sub>4</sub> |   |
| <sup>2 3</sup> <sub>5 6</sub> <sup>3</sup> <sub>8</sub>     | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sub>8 9</sub>     | 7  | 4   | <sup>1 2</sup> <sub>8</sub> <sup>1</sup> <sub>3</sub> <sup>2</sup> <sub>8 9</sub> |   |   |                           |   |
| <sup>3</sup> <sub>4</sub> <sup>6</sup> <sub>8</sub>         | <sup>1</sup> <sub>4</sub> <sup>9</sup>                    | 5  | <sup>6</sup> <sub>8 9</sub>                           | 2   | 7   | <sup>3</sup> <sub>8</sub> <sup>4</sup> <sub>8 9</sub> |                           |   |
| <sup>1 2</sup> <sub>4 5</sub>                               | <sup>2</sup> <sub>4 5</sub> <sup>1 2</sup> <sub>4 5</sub> | <sup>2</sup> <sub>8</sub> <sup>2</sup> <sub>4</sub> <sup>8</sup> | 6   | 9   | 7   | 3   |                           |   |
| <sup>6</sup> <sub>7</sub> <sup>6</sup> <sub>7</sub>         | <sup>2</sup> <sub>6</sub> <sup>4</sup> <sub>9</sub>       | 3  | <sup>2</sup> <sub>4</sub> <sup>9</sup>                | 5   | <sup>1 2</sup> <sub>4</sub> <sup>1</sup> <sub>8</sub> <sup>2</sup> <sub>8</sub> |   |                           |   |
| <sup>2 3</sup> <sub>4</sub>                                 | <sup>3</sup> <sub>9</sub>                                 | 8  | <sup>2</sup> <sub>9</sub>                             | 1   | 7   | <sup>2</sup> <sub>4</sub> <sup>6</sup> <sub>5</sub>   |                           |   |



|                  |                                 |                               |                  |  |                                 |  |  |   |
|------------------|---------------------------------|-------------------------------|------------------|--|---------------------------------|--|--|---|
| 4 <sup>3</sup>   | 6                               | 9                             | 1                | 4 <sup>2 3</sup>                             | 7                               | 4 <sup>2 3</sup> 5 <sup>2</sup>                | 8  |   |
| 1                | 5 <sup>3</sup>                  | 2                             | 4 5              | 8  | 5 <sup>3</sup>                  | 4 <sup>3</sup> 7 <sup>9</sup> 9 <sup>7</sup>   | 6  |   |
| 4 <sup>3</sup> 7 | 8                               | 5 <sup>3</sup> 7              | 4 5 6            | 4 <sup>2 3</sup> 6 <sup>9</sup>              | 2 <sup>2 3</sup> 5 <sup>9</sup> | 1  | 2 <sup>4</sup> 9 <sup>3</sup>                  |   |
| 8                | 1 <sup>4 5</sup>                | 1 <sup>4 5</sup>              | 7                | 1 <sup>4</sup> 4 <sup>6</sup> 5 <sup>9</sup> | 1 <sup>5</sup> 9 <sup>9</sup>   | 4 5 6 9  | 3  | 2 |
| 2 <sup>3</sup> 7 | 9                               | 7 <sup>3</sup>                | 4 5 6            | 1 <sup>2</sup> 4 <sup>6</sup>                | 8                               | 4 5 6 7  | 1 <sup>5 6</sup> 4 <sup>5</sup> 7              |   |
| 2 <sup>7</sup>   | 1 <sup>4 5</sup>                | 6                             | 3                | 1 <sup>2</sup> 4 <sup>9</sup>                | 1 <sup>2</sup> 5 <sup>9</sup>   | 8  | 1 <sup>5</sup> 7 <sup>9</sup> 9 <sup>4 5</sup> |   |
| 6 <sup>9</sup>   | 7                               | 1 <sup>3</sup> 8              | 2 <sup>8 9</sup> | 1 <sup>3</sup>                               | 4                               | 2 <sup>3</sup> 5 <sup>6</sup> 9 <sup>8 9</sup> | 1 <sup>3</sup> 5 <sup>9</sup>                  |   |
| 6 <sup>9</sup>   | 1 <sup>2 3</sup> 1 <sup>3</sup> | 2 <sup>8 9</sup>              | 5                | 1 <sup>3</sup>                               | 4                               | 2 <sup>3</sup> 6 <sup>7</sup> 9 <sup>9</sup>   | 1 <sup>3</sup> 7 <sup>9</sup>                  |   |
| 5                | 1 <sup>2 3</sup> 4 <sup>8</sup> | 1 <sup>3</sup> 4 <sup>8</sup> | 2 <sup>8 9</sup> | 7  | 6                               | 2 <sup>3</sup> 9 <sup>8 9</sup>                | 1 <sup>2</sup> 1 <sup>3</sup> 9                |   |

|                                 |                               |                |                                 |                               |                                   |  |                               |                                   |
|---------------------------------|-------------------------------|----------------|---------------------------------|-------------------------------|-----------------------------------|--|-------------------------------|-----------------------------------|
| 1 <sup>2</sup> 8                | 4                             | 6              | 7 <sup>2 3</sup> 5 <sup>5</sup> | 2 <sup>5</sup> 8              | 1 <sup>2 3</sup> 5 <sup>8</sup>   | 1 <sup>3</sup> 7 <sup>5</sup>                | 9                             | 1 <sup>2 3</sup> 5 <sup>8</sup>   |
| 1 <sup>2</sup> 8 <sup>9</sup> 7 | 5                             | 3              | 2 <sup>5</sup> 7                | 2 <sup>5</sup> 8 <sup>9</sup> | 4                                 | 1 <sup>5 6</sup> 7 <sup>8</sup> 6            |                               | 1 <sup>2</sup> 5 <sup>6</sup> 8   |
| 1 <sup>2</sup> 8 <sup>9</sup> 7 | 5                             | 2              | 2 <sup>3</sup> 5 <sup>7</sup>   | 6                             | 1 <sup>2 3</sup> 5 <sup>8 9</sup> | 1 <sup>3</sup> 4 <sup>5</sup> 7 <sup>8</sup> | 3                             | 1 <sup>2 3</sup> 4 <sup>5</sup> 8 |
| 2 <sup>6</sup> 8 <sup>9</sup>   | 1                             | 7              | 2 <sup>5 6</sup>                | 3                             | 2 <sup>5 6</sup> 9                | 5 <sup>6</sup> 9                             | 4                             | 5 <sup>6</sup> 8                  |
| 3                               | 2 <sup>6</sup> 4 <sup>9</sup> | 2 <sup>9</sup> | 8                               | 4 <sup>5</sup> 9 <sup>7</sup> | 2 <sup>5 6</sup> 9 <sup>7</sup>   | 5 <sup>6</sup> 9                             | 1                             | 5 <sup>6</sup>                    |
| 5                               | 6 <sup>4</sup> 8 <sup>9</sup> | 1              | 4 <sup>9</sup>                  | 7 <sup>6</sup> 9 <sup>9</sup> | 2                                 | 3 <sup>6</sup> 7 <sup>8</sup>                |                               | 3 <sup>6</sup> 8                  |
| 2 <sup>4</sup> 6                | 2 <sup>6</sup>                | 1              | 4 <sup>5 6</sup>                | 7                             | 2 <sup>3</sup> 5 <sup>6</sup>     | 8  | 2 <sup>3</sup> 5 <sup>6</sup> | 9                                 |
| 2 <sup>4</sup> 6 <sup>8 9</sup> | 2 <sup>6</sup> 8 <sup>9</sup> | 5              | 4 <sup>6</sup>                  | 1                             | 2 <sup>3</sup> 6 <sup>8</sup>     |  | 2 <sup>3</sup> 6              | 7                                 |
| 7                               | 3                             | 2 <sup>8</sup> | 9                               | 2 <sup>5</sup> 8              | 2 <sup>5 6</sup> 8                | 1 <sup>4</sup>                               | 2 <sup>5 6</sup>              | 1 <sup>4</sup>                    |

|                                 |  |                    |                                   |                               |                                 |  |                                 |  |
|---------------------------------|--|--------------------|-----------------------------------|-------------------------------|---------------------------------|--|---------------------------------|--|
| 1 <sup>2 3</sup>                | 2 <sup>3</sup> 1 <sup>3</sup>                  | 5                  | 8                                 | 4 <sup>9</sup>                | 6                               | 4 <sup>9</sup>                               | 7                               |  |
| 8 <sup>6</sup>                  | 6 <sup>8</sup>                                 | 5                  | 7                                 | 2 <sup>4</sup>                | 1 <sup>3</sup> 4 <sup>9</sup>   | 3 <sup>1</sup> 4 <sup>9</sup>                | 1 <sup>3</sup> 4 <sup>9</sup>   |  |
| 9                               | 7  | 4                  | 1 <sup>3</sup> 6                  | 1 <sup>3</sup> 6              | 2 <sup>5</sup>                  | 8  | 2 <sup>5</sup>                  |  |
| 2 <sup>3</sup> 7                | 1  | 6                  | 2 <sup>3</sup> 4 <sup>5</sup>     | 7                             | 8                               | 4 <sup>5</sup> 9                             | 4 <sup>5</sup> 9                |  |
| 2 <sup>3</sup> 8                | 4  | 3 <sup>8</sup>     | 9                                 | 1 <sup>3</sup> 5              | 1 <sup>2 3</sup> 6              | 7  | 1 <sup>2 3</sup> 5 <sup>6</sup> |  |
| 5                               | 2 <sup>3</sup> 8 <sup>9</sup> 7 <sup>8 9</sup> | 3 <sup>8</sup>     | 1 <sup>2 3</sup> 6 <sup>4</sup> 7 | 1 <sup>3</sup> 8              | 1 <sup>2 3</sup> 6              | 2 <sup>3</sup> 4 <sup>6</sup> 4 <sup>6</sup> | 1 <sup>2 3</sup> 4 <sup>6</sup> |  |
| 4                               | 3 <sup>1</sup> 9 <sup>7</sup> 9                | 1 <sup>2 3</sup> 6 | 1 <sup>2 3</sup> 5                | 2 <sup>3</sup> 5 <sup>9</sup> | 2 <sup>3</sup> 5 <sup>9</sup>   | 8  |                                 |  |
| 3 <sup>6</sup> 8                | 5  | 7 <sup>8 9</sup>   | 4 <sup>7</sup>                    | 2 <sup>3</sup> 8              | 2 <sup>3</sup> 7 <sup>9</sup>   | 1  | 2 <sup>3</sup> 6 <sup>9</sup>   |  |
| 1 <sup>3</sup> 6 <sup>7</sup> 8 | 3 <sup>6</sup> 8                               | 2                  | 1 <sup>3</sup> 8                  | 9                             | 1 <sup>3</sup> 5 <sup>7</sup> 8 | 4  | 3 <sup>5</sup> 6 <sup>5</sup> 6 |  |

|                               |                                 |                                 |                                   |                                   |                                 |   |  |   |
|-------------------------------|---------------------------------|---------------------------------|-----------------------------------|-----------------------------------|---------------------------------|---|--|---|
| 4 <sup>3</sup>                | 8                               | 7 <sup>3</sup>                  | 6                                 | 5 <sup>4</sup>                    | 1 <sup>7</sup> 9 <sup>7</sup> 9 | 1 <sup>3</sup> 7 <sup>9</sup>                                   | 2  |   |
| 2                             | 9                               | 5 <sup>6</sup>                  | 1 <sup>8</sup>                    | 1 <sup>8</sup>                    | 7                               | 4 <sup>6</sup> 5 <sup>3</sup>                                   | 4 <sup>5 6</sup>                               |   |
| 4 <sup>6</sup>                | 1                               | 7 <sup>5 6</sup>                | 3                                 | 4 <sup>2</sup> 4 <sup>9</sup>     |                                 | 6 <sup>5</sup> 9 <sup>7</sup> 9                                 | 8  |   |
| 7                             | 2 <sup>6</sup> 1 <sup>8</sup> 9 | 6 <sup>8 9</sup>                | 5 <sup>8</sup> 9                  | 2 <sup>6</sup> 8                  | 2 <sup>5 6</sup> 8              | 1 <sup>2</sup> 6 <sup>8</sup> 9                                 | 4  | 3 |
| 1 <sup>3</sup> 6 <sup>8</sup> | 2 <sup>3</sup> 6                | 1 <sup>3</sup> 6                | 4                                 | 2 <sup>3</sup> 6                  | 2 <sup>3</sup> 6                | 5   | 1 <sup>6</sup> 7 <sup>8 9</sup> 7 <sup>9</sup> |   |
| 5                             | 4                               | 3 <sup>8</sup> 6                |                                   | 2 <sup>3</sup> 6                  | 1                               | 2 <sup>6</sup> 7 <sup>8 9</sup> 7 <sup>8 9</sup> 7 <sup>9</sup> |  |   |
| 1 <sup>6</sup> 8              | 5 <sup>6</sup> 7                | 2                               | 1 <sup>5</sup> 7 <sup>8</sup>     | 9                                 | 4 <sup>5 6</sup> 8              | 3   | 1 <sup>5</sup> 4 <sup>5</sup> 7                |   |
| 9                             | 5 <sup>6</sup> 1 <sup>3</sup> 6 | 3 <sup>1</sup> 5 <sup>4</sup> 6 | 1 <sup>3</sup> 4 <sup>5 6</sup> 8 | 3 <sup>1</sup> 4 <sup>5 6</sup> 8 | 2                               | 1 <sup>4</sup> 5 <sup>7</sup>                                   |  |   |
| 1 <sup>3</sup> 8              | 5 <sup>3</sup> 7                | 4                               | 2                                 | 1 <sup>3</sup> 5 <sup>8</sup>     | 3 <sup>1</sup> 7 <sup>8 9</sup> | 6   | 1 <sup>5</sup> 7 <sup>9</sup>                  |   |

|                  |                                 |                               |                                       |                                 |                                 |                                 |                               |                               |
|------------------|---------------------------------|-------------------------------|---------------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|
| 1                | 3                               | 4 <sup>2</sup> 6 <sup>7</sup> | 2 <sup>4 5 6</sup> 7 <sup>7 8 9</sup> | 4 <sup>6</sup> 7 <sup>8 9</sup> | 4 <sup>5</sup> 7 <sup>8 9</sup> | 2 <sup>5</sup> 7 <sup>8</sup>   | 5 <sup>5</sup> 7 <sup>8</sup> |                               |
| 8                | 2 <sup>7</sup> 6                | 5                             | 2 <sup>7</sup> 6                      | 6                               | 3                               | 4                               | 9                             | 1                             |
| 9                | 2 <sup>7</sup>                  | 2 <sup>4</sup> 7              | 2 <sup>4 5</sup> 7 <sup>7 8</sup>     | 4 <sup>8</sup>                  | 1                               | 2 <sup>3</sup> 5 <sup>7</sup> 8 | 6                             | 5 <sup>3</sup> 7 <sup>8</sup> |
| 2 <sup>5 6</sup> | 2 <sup>5 6</sup> 7 <sup>8</sup> | 2 <sup>6</sup> 7 <sup>8</sup> | 9                                     | 3                               | 2 <sup>4 5</sup> 7 <sup>8</sup> | 5 <sup>8</sup>                  | 1                             | 4 <sup>5</sup> 8              |
| 5 <sup>3</sup>   | 1                               | 3 <sup>7 8 9</sup>            | 4 <sup>5</sup> 7 <sup>7</sup>         | 4 <sup>8</sup>                  | 6                               | 5 <sup>3</sup> 8 <sup>9</sup>   | 2                             | 4 <sup>5</sup> 8 <sup>9</sup> |
| 2 <sup>3</sup> 5 | 4                               | 2 <sup>3</sup> 8 <sup>9</sup> | 1                                     | 2 <sup>5</sup> 8                | 7                               | 5 <sup>3</sup> 8 <sup>9</sup>   | 6                             |                               |
| 4 <sup>5 6</sup> | 5 <sup>6</sup> 8 <sup>9</sup>   | 6 <sup>8</sup>                | 4 <sup>7</sup>                        | 6                               | 1                               | 5 <sup>6</sup> 7 <sup>8 9</sup> | 4 <sup>5</sup> 8              | 2                             |
| 7                | 2 <sup>5 6</sup> 9              | 2 <sup>3</sup> 6              | 8                                     | 4 <sup>2</sup> 6 <sup>9</sup>   | 4 <sup>2</sup> 9                | 1                               | 4 <sup>5</sup> 5 <sup>9</sup> |                               |
| 4 <sup>2</sup> 6 | 2 <sup>6</sup> 8 <sup>9</sup>   | 1                             | 3                                     | 5                               | 4 <sup>2</sup> 7 <sup>9</sup>   | 6 <sup>4</sup> 8                |                               |                               |

|                                 |                                 |                  |                    |                               |                               |  |                                 |                                 |
|---------------------------------|---------------------------------|------------------|--------------------|-------------------------------|-------------------------------|--|---------------------------------|---------------------------------|
| 1 <sup>2</sup> 5 <sup>6</sup> 9 | 1 <sup>6</sup> 9                | 2 <sup>5 6</sup> | 8                  | 1 <sup>9</sup>                | 4 <sup>5 6</sup> 7            | 2 <sup>3</sup> 5 <sup>6</sup> 4 <sup>5 6</sup> | 3 <sup>4</sup> 5 <sup>6</sup>   | 2 <sup>4</sup> 5 <sup>6</sup>   |
| 1 <sup>2</sup> 5 <sup>6</sup> 9 | 1 <sup>6</sup> 9                | 4                | 3                  | 1 <sup>9</sup>                | 5 <sup>6</sup> 7              | 8  | 5 <sup>6</sup> 7                | 2 <sup>5</sup> 6                |
| 7                               | 8                               | 3                | 4 <sup>5 6</sup>   | 2                             | 4 <sup>5 6</sup>              | 1  | 9                               | 4 <sup>5 6</sup>                |
| 1 <sup>2</sup> 4 <sup>6</sup> 9 | 5                               | 2 <sup>6</sup>   | 1 <sup>6</sup>     | 3 <sup>8</sup>                | 3 <sup>6</sup> 8              | 2 <sup>6</sup> 9                               | 7                               | 1 <sup>2</sup> 4 <sup>6</sup> 8 |
| 3                               | 1 <sup>7</sup> 6 <sup>9</sup> 7 | 6                | 2                  | 4                             | 5 <sup>6</sup> 8              | 5 <sup>6</sup> 9                               | 1 <sup>5</sup> 8                | 5 <sup>6</sup> 8                |
| 1 <sup>2</sup> 4 <sup>6</sup>   | 1 <sup>4</sup> 6                | 8                | 1 <sup>5 6</sup> 7 | 5 <sup>6</sup>                | 9                             | 2 <sup>5 6</sup> 4 <sup>5 6</sup>              | 3                               |                                 |
| 5 <sup>6</sup> 8                | 2                               | 9                | 4 <sup>5 6</sup> 7 | 5 <sup>6</sup> 7 <sup>8</sup> | 4 <sup>5 6</sup> 8            | 5 <sup>6</sup> 8                               | 1 <sup>3</sup> 5 <sup>6</sup> 8 | 5 <sup>6</sup> 7 <sup>8</sup>   |
| 4 <sup>5 6</sup> 8              | 4 <sup>7</sup>                  | 3 <sup>6</sup> 7 | 5 <sup>6</sup>     | 9                             | 5 <sup>6</sup> 7 <sup>8</sup> | 1  | 5 <sup>6</sup> 7                | 2 <sup>5</sup> 6                |
| 5 <sup>6</sup> 8                | 3 <sup>6</sup> 7                | 1                | 5 <sup>6</sup> 7   | 5 <sup>6</sup> 8              | 2                             | 4  | 5 <sup>6</sup> 8                | 9                               |

|                 |                 |                    |            |                |          |                |               |
|-----------------|-----------------|--------------------|------------|----------------|----------|----------------|---------------|
| 1 2<br>7        | 1 2<br>4<br>8   | 1 2<br>4<br>7<br>9 | 4 2<br>7 8 | 3 6            | 7 9      | 5              | 1 2<br>7 9    |
| 3               | 2<br>4 5        | 2<br>4<br>7 9      | 1          | 2<br>4 5       | 2<br>4 5 | 8 6            | 2<br>7 9      |
| 1 2<br>5 6<br>7 | 1 2<br>5 6<br>8 | 1 2<br>7 6         | 9          | 2<br>5 6       | 2<br>5 6 | 4              | 1 2<br>3      |
| 4               | 2 3<br>5 6      | 2 3<br>6           | 2<br>5 6   | 8              | 1        | 2 3<br>7 9     | 2<br>6<br>7 9 |
| 1 2<br>5 6<br>8 | 7               | 1 2<br>6           | 3          | 2<br>5 9       | 2<br>5 9 | 5 6<br>9       | 2<br>8 9<br>4 |
| 2<br>5 6<br>8   | 9               | 2 3<br>6           | 2<br>4 5 6 | 2<br>4 5       | 1        | 3<br>7 8       | 2 3<br>7 8 6  |
| 1 2<br>7        | 1 2<br>4        | 5                  | 2<br>4 7 8 | 1 2<br>4 7 8 9 | 3        | 1<br>6 4 7 8 9 | 1<br>6 7 8 9  |
| 9               | 1 2 3<br>4      | 8                  | 2<br>4 5 7 | 6<br>4 5 7     |          | 3 1<br>4 7     |               |
| 1<br>6<br>7     | 1 3<br>4 6      | 1 3<br>7 6         | 4<br>7 8   | 1<br>4 7 8 9   |          | 2<br>4 7 8 9   | 5<br>7 8 9    |

|          |          |                 |               |                     |                      |                   |                 |
|----------|----------|-----------------|---------------|---------------------|----------------------|-------------------|-----------------|
| 1        | 5        | 2<br>6<br>7 8 9 | 2<br>6<br>7   | 2<br>6<br>3         | 2<br>6<br>4<br>7 8 9 |                   |                 |
| 2<br>7 8 | 2<br>8   | 2<br>7 8        | 4             | 1<br>5              | 9                    | 1 2<br>5 6<br>7 8 | 3<br>5<br>7 8   |
| 3        | 4        | 2<br>5 6<br>7 9 | 8             | 1<br>6              |                      | 1 2<br>5 6<br>9 7 | 1 2<br>6<br>5 9 |
| 2<br>8 9 | 3        | 2<br>8          | 1             | 2<br>9              | 5                    | 7                 | 4 6             |
| 5        | 7        | 4               | 2 3<br>6<br>9 | 2 3<br>6<br>9       | 8                    | 1 2 3<br>9        | 1 2<br>9        |
| 2<br>9   | 1<br>6   | 1<br>6          | 2 3<br>9      | 7                   | 4                    | 2 3<br>5 8 9      | 2<br>8<br>5 8 9 |
|          | 1<br>7 8 | 1<br>8 9        | 3<br>7 8      | 3 1<br>5 6<br>7 8 9 | 1<br>4 5<br>7        | 3<br>4 6<br>7 8   | 2<br>6<br>7 8   |
| 4        | 2<br>8 9 | 2 3<br>7 8      |               | 3<br>6<br>9 7       | 6                    | 3<br>8            | 5 1             |
| 6        | 1<br>8   | 1<br>7 8        | 3<br>5        | 3 1<br>4 5<br>7 8   | 2                    | 3<br>4 8          | 9<br>4 7 8      |

|               |               |               |               |            |            |                 |              |               |
|---------------|---------------|---------------|---------------|------------|------------|-----------------|--------------|---------------|
| 8             | 5             | 2 3<br>6<br>7 | 2<br>4 6<br>7 | 9          | 1 2<br>4 7 | 1 3<br>4 7      | 1 2 3<br>7   | 1 2 3<br>7    |
| 1             | 2<br>4 7      | 2 3<br>9 7    | 2<br>4 5      | 2<br>7     | 2<br>4 5   | 6               | 2 3<br>7 8 9 | 2 3<br>8      |
| 2<br>4 6<br>9 | 2<br>4 6<br>9 | 2<br>6        | 3             | 1 2<br>6   | 8          | 1<br>4 5<br>7 9 | 1 2<br>5     | 1 2<br>5      |
| 2<br>6<br>7   | 2<br>6        | 8             | 5 6<br>7      | 4          | 1 3<br>7 5 | 1 3<br>7 5      | 1 3<br>7 5   | 9             |
| 5             | 1             | 4             | 2<br>7 8 9    | 2 3<br>6   | 2 3<br>7 9 | 3               | 3<br>7 8     | 3<br>8 6      |
| 6<br>9        | 3             | 6<br>7 9      | 5 6<br>7 8    | 6<br>7     | 5          | 2               | 4            | 1<br>5 6<br>8 |
| 2 3<br>6<br>9 | 2<br>6<br>9   | 1<br>5        | 2<br>7 8 9    | 2 3<br>7 8 | 2 3<br>7 9 | 1 3<br>5 9      | 1 2 3<br>5 9 | 4             |
| 2 3<br>4 9    | 8             | 1<br>5        | 2<br>4 9      | 2 3<br>9   | 6          | 1 3<br>5 9      | 1 2 3<br>5 9 | 7             |
| 7             | 2<br>4 9      | 2<br>9        | 1             | 5          | 2 3<br>4 9 | 3               | 2 3<br>8 9   | 6             |

|          |                 |            |            |              |            |            |            |               |
|----------|-----------------|------------|------------|--------------|------------|------------|------------|---------------|
| 4<br>7   | 4<br>7          | 5 6<br>3   | 1          | 9            | 8          | 2 3<br>5   | 2 3<br>5   | 2<br>6        |
| 5<br>9   | 5 6<br>8 9      | 5 6<br>8 9 | 2 3<br>6   | 2 3<br>4 5 6 | 2 3<br>4 5 | 7          | 1          | 6<br>8 9      |
| 2        | 5 6<br>8 9      | 1          | 3<br>7     | 3<br>5 6     | 3<br>5     | 4          | 5<br>8     | 6<br>8 9      |
| 4 5<br>9 | 1               | 2 3<br>5 9 | 2 3<br>8 9 | 2 3<br>5 8   | 6          | 2<br>5 9   | 4<br>7 8   | 4<br>7 8      |
| 8        | 2<br>5 9        | 2 3<br>5 9 | 4          | 7            | 2 3<br>5 9 | 6          | 2<br>5     | 1             |
| 6        | 4 5<br>9        | 7          | 2<br>8 9   | 2<br>5 8     | 1          | 2<br>5 9   | 4<br>8     | 3             |
| 1        | 2<br>7 8 9      | 2<br>8 9   | 5          | 4<br>6 8     | 2<br>4 7 9 | 2 3<br>4 7 | 2 3<br>4 7 | 2<br>4 7      |
| 5<br>7 9 | 3               | 2<br>5 9   | 2<br>7 9   | 1<br>4 7 9   | 2<br>4 7 9 | 8          | 6          | 2<br>4 5<br>7 |
| 5<br>7   | 2<br>5 6<br>7 8 | 4          | 2 3<br>7 8 | 2 3<br>6 8   | 2 3<br>6 7 | 1          | 9          | 2<br>5<br>7   |

|          |            |               |            |          |          |            |              |              |
|----------|------------|---------------|------------|----------|----------|------------|--------------|--------------|
| 3        | 2<br>9     | 2<br>5 9      | 5<br>9     | 4        | 1        | 8          | 7            | 6            |
| 5<br>8 9 | 6          | 1             | 7          | 3<br>8 9 | 5<br>9   | 5<br>9     | 2<br>4       | 2<br>4       |
| 5<br>8 9 | 4<br>7     | 4<br>7        | 2          | 3<br>8   | 6        | 1          | 5<br>9       | 3<br>5 9     |
| 5<br>9   | 7 8        | 7 8           | 6          | 5<br>9   | 2        | 4          | 3            | 1            |
| 2        | 1          | 3<br>5 6<br>9 | 4 5<br>8 9 | 7        | 4 5<br>9 | 5 6<br>9   | 5 6<br>8 9   | 5 6<br>8 9   |
| 4        | 3<br>9     | 3<br>5 6<br>9 | 5<br>8 9   | 1        | 5<br>9   | 5 6<br>7 9 | 5 6<br>8 9   | 5 6<br>7 8 9 |
| 6        | 5          | 2 3<br>4 9    | 1          | 2<br>9   | 8        | 3<br>7 9   | 4<br>9 7     | 3<br>9       |
| 7        | 3<br>8 9   | 3<br>8 9      | 4 5<br>9   | 6        | 4 5<br>9 | 2          | 1            | 3<br>5 8 9   |
| 1        | 2<br>4 8 9 | 2<br>4 8 9    | 3          | 2<br>5 9 | 7        | 5 6<br>9   | 4 5 6<br>8 9 | 4 5 6<br>8 9 |

|               |          |          |        |            |                   |              |            |          |
|---------------|----------|----------|--------|------------|-------------------|--------------|------------|----------|
| 1<br>4 8 9    | 1<br>4 8 | 6<br>4 7 | 6      | 3          | 1 2<br>4 6<br>7 8 | 1 2<br>5 7 8 | 2<br>5 9   | 2<br>5   |
| 3<br>4 6<br>9 | 3<br>4 6 | 3<br>4 6 | 3<br>7 |            | 2<br>7            | 2<br>5 7     | 2<br>5 9   | 1        |
| 1<br>4 8      | 5        | 2        | 1<br>7 | 1<br>4 7 8 | 9                 | 4<br>7       | 3<br>4 7   | 6        |
| 7             | 4<br>8 6 | 9        | 5      | 2 3<br>7   | 2 3<br>7          | 1            | 4<br>6 4 8 |          |
| 1<br>8        | 3<br>6   | 2        | 4      | 1<br>7 9   | 1<br>7            | 3<br>7 8     | 5<br>7 8 9 | 3        |
| 5             | 1<br>4   | 3<br>4   | 8      | 1<br>7 9   | 6                 | 4<br>7       | 2<br>4 7 9 | 3        |
| 2             | 4<br>7   | 3<br>6   | 8      | 1<br>7     | 5                 | 1 3<br>7     | 3<br>4 6   | 9<br>4 7 |
| 3<br>6        | 9        | 5        | 2      | 3<br>7     | 4                 | 3<br>7 8     | 1<br>7 8   | 3        |
| 4<br>6<br>7   | 3<br>4 6 | 1        | 9      | 3<br>7 8   | 3<br>7 8          | 2<br>5 4 7   | 3<br>6 5   | 2<br>5   |

|                |                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1              | 2              | 4              | 6              | <sup>3</sup> 5 | <sup>3</sup> 8 | <sup>7</sup> 9 |
| 8              | <sup>3</sup> 6 | 2              | <sup>4</sup> 7 | <sup>3</sup> 1 | <sup>3</sup> 4 | <sup>5</sup> 9 |
| <sup>3</sup> 5 | <sup>3</sup> 7 | <sup>3</sup> 9 | <sup>3</sup> 7 | <sup>3</sup> 8 | <sup>3</sup> 9 | <sup>3</sup> 2 |
| <sup>2</sup> 3 | <sup>1</sup> 4 | <sup>1</sup> 5 | <sup>2</sup> 6 | <sup>3</sup> 7 | <sup>4</sup> 8 | <sup>5</sup> 9 |
| 6              | <sup>4</sup> 8 | <sup>2</sup> 3 | <sup>5</sup> 8 | <sup>2</sup> 9 | <sup>4</sup> 5 | <sup>1</sup> 6 |
| <sup>5</sup> 7 | <sup>3</sup> 8 | 9              | 1              | <sup>4</sup> 5 | <sup>3</sup> 6 | <sup>5</sup> 8 |
| <sup>2</sup> 7 | 5              | <sup>1</sup> 2 | 4              | <sup>2</sup> 7 | <sup>2</sup> 8 | <sup>1</sup> 9 |
| <sup>2</sup> 3 | <sup>3</sup> 6 | <sup>2</sup> 3 | 9              | 1              | <sup>2</sup> 3 | 4              |
| <sup>4</sup> 7 | <sup>3</sup> 1 | <sup>3</sup> 6 | 8              | <sup>5</sup> 7 | <sup>3</sup> 9 | 2              |

|                |                |                |                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <sup>1</sup> 6 | <sup>1</sup> 4 | 2              | 3              | <sup>6</sup> 7 | <sup>6</sup> 8 | <sup>1</sup> 4 | <sup>6</sup> 5 | <sup>6</sup> 7 |
| 8              | 5              | <sup>1</sup> 3 | <sup>2</sup> 6 | 4              | <sup>2</sup> 7 | <sup>1</sup> 2 | <sup>3</sup> 6 | <sup>1</sup> 2 |
| 9              | 7              | <sup>3</sup> 4 | <sup>5</sup> 6 | <sup>2</sup> 8 | 1              | <sup>2</sup> 3 | <sup>2</sup> 3 | <sup>2</sup> 4 |
| 4              | <sup>1</sup> 6 | <sup>1</sup> 5 | <sup>2</sup> 6 | <sup>2</sup> 5 | 3              | 8              | 9              | <sup>1</sup> 2 |
| <sup>7</sup> 6 | 2              | <sup>5</sup> 6 | 9              | 1              | <sup>7</sup> 8 | <sup>4</sup> 7 | <sup>4</sup> 5 | 3              |
| <sup>1</sup> 3 | <sup>1</sup> 3 | <sup>1</sup> 5 | <sup>2</sup> 7 | <sup>2</sup> 5 | 4              | <sup>1</sup> 2 | <sup>2</sup> 5 | 6              |
| <sup>1</sup> 2 | <sup>3</sup> 1 | <sup>3</sup> 1 | <sup>1</sup> 2 | <sup>2</sup> 6 | <sup>2</sup> 6 | 5              | <sup>2</sup> 3 | 9              |
| <sup>2</sup> 3 | <sup>3</sup> 6 | <sup>3</sup> 4 | <sup>2</sup> 6 | <sup>2</sup> 6 | 5              | <sup>2</sup> 3 | 1              | <sup>2</sup> 4 |
| 5              | <sup>1</sup> 4 | <sup>6</sup> 9 | <sup>1</sup> 2 | <sup>2</sup> 6 | 3              | <sup>2</sup> 4 | <sup>2</sup> 6 | 8              |

|                |                |                |                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <sup>5</sup> 7 | <sup>2</sup> 8 | 1              | 3              | <sup>2</sup> 5 | <sup>4</sup> 6 | <sup>5</sup> 6 | <sup>4</sup> 6 | <sup>4</sup> 6 |
| 9              | 6              | <sup>5</sup> 7 | 8              | <sup>1</sup> 4 | <sup>1</sup> 3 | 2              | <sup>4</sup> 3 | <sup>3</sup> 9 |
| 3              | 4              | <sup>2</sup> 5 | <sup>2</sup> 9 | <sup>1</sup> 6 | <sup>1</sup> 5 | <sup>6</sup> 7 | <sup>6</sup> 8 | <sup>6</sup> 9 |
| 4              | <sup>1</sup> 5 | <sup>3</sup> 6 | 9              | <sup>3</sup> 8 | <sup>2</sup> 5 | 7              | <sup>1</sup> 3 | <sup>2</sup> 3 |
| <sup>1</sup> 7 | <sup>1</sup> 8 | 9              | 4              | 6              | <sup>2</sup> 7 | <sup>1</sup> 2 | <sup>3</sup> 1 | 5              |
| 2              | <sup>5</sup> 7 | <sup>3</sup> 6 | 1              | <sup>3</sup> 8 | <sup>5</sup> 7 | <sup>3</sup> 6 | <sup>4</sup> 6 | <sup>4</sup> 6 |
| <sup>5</sup> 7 | <sup>5</sup> 9 | <sup>4</sup> 5 | 6              | <sup>4</sup> 5 | 3              | <sup>2</sup> 8 | <sup>7</sup> 8 | 1              |
| <sup>1</sup> 7 | <sup>1</sup> 2 | <sup>2</sup> 3 | <sup>2</sup> 4 | <sup>1</sup> 2 | <sup>8</sup> 9 | <sup>2</sup> 3 | <sup>6</sup> 5 | <sup>2</sup> 3 |
| 6              | <sup>1</sup> 2 | <sup>3</sup> 5 | 8              | <sup>2</sup> 5 | <sup>1</sup> 2 | 9              | <sup>4</sup> 7 | <sup>2</sup> 3 |

|                |                |                |                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1              | <sup>4</sup> 5 | <sup>4</sup> 5 | <sup>4</sup> 5 | <sup>3</sup> 6 | <sup>3</sup> 4 | 7              | <sup>4</sup> 5 | 2              |
| <sup>4</sup> 6 | 3              | <sup>2</sup> 4 | <sup>2</sup> 5 | <sup>2</sup> 6 | <sup>2</sup> 7 | 9              | <sup>4</sup> 5 | <sup>4</sup> 6 |
| <sup>4</sup> 6 | 9              | <sup>2</sup> 4 | <sup>2</sup> 5 | <sup>2</sup> 6 | <sup>2</sup> 7 | <sup>1</sup> 3 | <sup>1</sup> 4 | <sup>1</sup> 3 |
| 4              | <sup>1</sup> 2 | <sup>1</sup> 4 | 3              | 9              | <sup>1</sup> 2 | <sup>1</sup> 4 | 6              | <sup>1</sup> 4 |
| 5              | <sup>1</sup> 4 | <sup>6</sup> 7 | 8              | <sup>1</sup> 6 | <sup>1</sup> 4 | 2              | 3              | 9              |
| <sup>3</sup> 4 | <sup>1</sup> 2 | <sup>3</sup> 6 | <sup>2</sup> 4 | <sup>2</sup> 5 | <sup>2</sup> 6 | <sup>1</sup> 4 | <sup>1</sup> 5 | <sup>1</sup> 4 |
| 2              | <sup>1</sup> 4 | <sup>1</sup> 6 | <sup>1</sup> 3 | <sup>1</sup> 3 | 8              | 5              | <sup>1</sup> 4 | <sup>1</sup> 3 |
| <sup>4</sup> 3 | <sup>1</sup> 5 | <sup>1</sup> 4 | <sup>1</sup> 3 | <sup>1</sup> 2 | <sup>1</sup> 3 | <sup>1</sup> 4 | <sup>1</sup> 3 | <sup>1</sup> 3 |
| <sup>3</sup> 6 | <sup>5</sup> 7 | <sup>1</sup> 3 | <sup>5</sup> 6 | <sup>1</sup> 3 | <sup>1</sup> 3 | <sup>1</sup> 3 | <sup>1</sup> 3 | <sup>1</sup> 3 |

|                |                |                |                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <sup>2</sup> 3 | <sup>2</sup> 3 | 6              | 1              | <sup>4</sup> 5 | 7              | <sup>2</sup> 8 | <sup>2</sup> 3 | <sup>2</sup> 3 |
| 2              | 7              | <sup>1</sup> 2 | <sup>4</sup> 8 | <sup>4</sup> 8 | 3              | 5              | 6              | <sup>1</sup> 2 |
| <sup>3</sup> 5 | 9              | <sup>1</sup> 3 | <sup>4</sup> 6 | <sup>4</sup> 5 | 2              | <sup>1</sup> 8 | <sup>1</sup> 4 | <sup>1</sup> 3 |
| <sup>3</sup> 5 | 8              | <sup>3</sup> 6 | <sup>3</sup> 7 | <sup>1</sup> 6 | <sup>1</sup> 6 | 2              | <sup>1</sup> 4 | <sup>1</sup> 9 |
| <sup>2</sup> 3 | <sup>1</sup> 2 | <sup>2</sup> 3 | <sup>2</sup> 3 | <sup>1</sup> 2 | <sup>1</sup> 6 | <sup>1</sup> 6 | <sup>1</sup> 4 | <sup>1</sup> 9 |
| <sup>2</sup> 6 | <sup>1</sup> 2 | <sup>2</sup> 9 | 5              | <sup>1</sup> 2 | 4              | 3              | <sup>1</sup> 7 | <sup>1</sup> 8 |
| 4              | <sup>2</sup> 3 | <sup>2</sup> 3 | <sup>2</sup> 3 | <sup>1</sup> 2 | <sup>1</sup> 6 | 7              | 9              | <sup>1</sup> 2 |
| 1              | <sup>2</sup> 5 | <sup>2</sup> 5 | <sup>2</sup> 6 | <sup>2</sup> 6 | 8              | 4              | 3              | <sup>2</sup> 5 |
| <sup>2</sup> 3 | <sup>2</sup> 3 | <sup>2</sup> 3 | <sup>2</sup> 3 | <sup>1</sup> 2 | <sup>1</sup> 3 | 5              | <sup>1</sup> 2 | <sup>1</sup> 6 |

|                |                |                |                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <sup>1</sup> 2 | <sup>1</sup> 2 | 3              | <sup>1</sup> 2 | <sup>1</sup> 6 | <sup>1</sup> 5 | 7              | 8              | <sup>1</sup> 2 |
| <sup>1</sup> 4 | <sup>5</sup> 8 | 6              | <sup>7</sup> 8 | <sup>5</sup> 7 | 9              | <sup>1</sup> 4 | <sup>2</sup> 3 | <sup>1</sup> 2 |
| 7              | <sup>1</sup> 2 | <sup>1</sup> 3 | <sup>1</sup> 4 | <sup>1</sup> 3 | <sup>1</sup> 3 | <sup>1</sup> 4 | <sup>2</sup> 6 | 5              |
| <sup>1</sup> 2 | <sup>1</sup> 2 | 7              | <sup>1</sup> 6 | <sup>1</sup> 5 | <sup>1</sup> 5 | <sup>4</sup> 5 | <sup>4</sup> 5 | 3              |
| <sup>1</sup> 3 | <sup>1</sup> 4 | <sup>5</sup> 8 | <sup>1</sup> 6 | <sup>1</sup> 3 | <sup>1</sup> 3 | <sup>4</sup> 5 | <sup>4</sup> 5 | 9              |
| <sup>3</sup> 6 | <sup>5</sup> 8 | <sup>5</sup> 6 | <sup>3</sup> 7 | <sup>5</sup> 6 | 4              | 2              | 1              | <sup>7</sup> 8 |
| 5              | 7              | <sup>1</sup> 2 | 3              | <sup>1</sup> 4 | <sup>1</sup> 8 | <sup>1</sup> 4 | <sup>2</sup> 4 | 6              |
| 8              | <sup>3</sup> 6 | <sup>1</sup> 4 | <sup>1</sup> 6 | <sup>1</sup> 7 | <sup>1</sup> 9 | <sup>1</sup> 4 | <sup>3</sup> 5 | <sup>1</sup> 4 |
| 9              | <sup>3</sup> 6 | <sup>1</sup> 2 | 5              | <sup>1</sup> 4 | <sup>1</sup> 6 | <sup>1</sup> 3 | <sup>2</sup> 3 | <sup>1</sup> 2 |

|             |             |             |             |             |             |             |             |             |             |             |             |             |        |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------|
| 1<br>4<br>7 | 3<br>4<br>7 | 1<br>4<br>7 | 3<br>4<br>7 | 2           | 6           | 5<br>9      | 4<br>7<br>9 | 3<br>4<br>7 | 8           | 1<br>7      | 5<br>9      | 1<br>7      | 5<br>9 |
|             | 3<br>6<br>7 |             | 3<br>6<br>7 |             | 3<br>6<br>7 | 5<br>8      |             | 3<br>6<br>7 | 1           |             | 2<br>5<br>7 | 2<br>5<br>6 | 9      |
| 1<br>4<br>7 | 6<br>8<br>9 | 5           | 4<br>6<br>9 | 4<br>7<br>8 | 2           | 4<br>7<br>9 |             | 1<br>6<br>9 | 3           | 1<br>7      | 6<br>9      |             |        |
| 4<br>7<br>8 | 2<br>9      | 4<br>7<br>8 | 4<br>9      |             | 1<br>4<br>7 | 4<br>7      |             | 5           |             | 3<br>6      | 1<br>8      | 9           | 6      |
|             | 5<br>8      |             | 3<br>8      | 1           | 9           | 6           | 2           | 7           | 5<br>8      |             | 4           |             |        |
| 4<br>7      | 5<br>9      | 6           | 4<br>5<br>9 | 1<br>4<br>7 |             | 3<br>8      | 2           | 1<br>5<br>9 |             | 1<br>5<br>9 |             |             |        |
| 1<br>2<br>4 | 3<br>5<br>6 | 1<br>2<br>4 | 3<br>5<br>6 | 7           | 4<br>5      | 5<br>8<br>9 | 6           | 1<br>3<br>9 | 1<br>2<br>4 | 1<br>2<br>3 | 8<br>9      | 1<br>2<br>3 | 8<br>9 |
| 1<br>2<br>4 | 3<br>5<br>6 | 1<br>2<br>4 | 3<br>5<br>6 | 7           | 4<br>5      | 5<br>8<br>9 | 6           | 1<br>3<br>9 | 1<br>2<br>4 | 1<br>2<br>3 | 8<br>9      | 1<br>2<br>3 | 8<br>9 |
| 1<br>4      | 3<br>7      | 9           | 8           | 2           | 4<br>7      |             | 1<br>3<br>7 | 5           | 6           | 1<br>7      | 3<br>9      |             |        |

|             |             |        |             |             |             |             |             |             |        |             |        |        |        |
|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|--------|--------|--------|
| 2<br>4<br>5 | 6<br>7      | 4<br>6 | 2<br>6      | 8           | 1           | 2<br>3<br>5 | 6<br>9      | 3<br>5      | 2<br>4 | 6<br>9      | 4<br>5 | 6<br>9 | 3<br>9 |
| 9           | 1<br>2<br>4 | 5      | 8           | 2<br>3<br>6 | 7           | 2<br>3<br>5 | 6           | 1<br>5      | 3<br>4 | 1<br>2<br>6 | 1<br>4 | 3<br>5 | 6      |
| 3           | 1<br>2<br>5 |        | 1<br>2<br>6 | 4           | 5<br>6<br>9 | 2<br>5<br>6 | 9           | 1<br>5<br>9 | 7      | 8           |        |        |        |
| 1<br>2<br>7 | 1<br>2<br>9 |        | 5           | 2<br>6<br>7 |             | 6<br>8      | 7<br>8      | 2<br>6<br>7 | 4      | 3           | 1<br>6 | 9      |        |
| 4<br>7      | 6           | 4<br>7 | 9           | 7           | 3<br>4      | 5<br>8      | 1           | 2           | 8<br>9 | 5           | 9      |        |        |
| 1<br>2<br>4 | 1<br>2<br>8 | 3<br>4 | 1<br>2<br>3 | 4           | 9           | 3<br>4      | 5<br>6<br>8 | 2<br>3<br>5 | 6<br>8 | 1<br>5<br>8 | 1<br>6 | 7      |        |
| 1<br>4      | 5           | 3<br>4 | 1<br>3      | 1<br>4      | 9           | 7           | 8<br>9      | 7<br>8      | 9      | 6           | 1<br>4 | 2      |        |
| 1<br>2<br>4 |             | 8      | 1<br>2<br>3 | 4           | 9           | 1<br>3<br>6 | 3<br>6      | 3<br>6      | 7      | 5           | 1<br>4 | 3<br>9 |        |
|             | 6           | 1<br>3 |             | 6           | 5           | 2           | 4           | 1<br>3      | 1<br>8 | 9           | 1<br>8 | 3<br>9 | 9      |

|             |             |             |        |   |        |        |             |        |        |             |        |   |  |
|-------------|-------------|-------------|--------|---|--------|--------|-------------|--------|--------|-------------|--------|---|--|
| 9           |             | 3<br>6      | 2      | 4 | 7      | 3<br>6 | 1           | 5      | 7<br>8 | 7<br>8      | 3<br>6 |   |  |
| 1           |             | 1<br>5<br>6 | 4      | 5 | 7<br>9 | 5<br>6 | 8           | 2      | 1<br>3 | 1<br>2<br>3 | 6      |   |  |
| 8           | 1<br>7      | 3<br>5      | 1<br>6 | 2 | 7      | 3<br>5 | 6           |        | 4      | 1<br>3      |        |   |  |
| 1<br>2<br>4 | 1<br>2<br>7 | 1<br>9      | 6      | 5 | 4<br>8 | 5<br>9 | 4<br>5<br>6 | 2<br>9 | 5      | 3<br>8      | 2<br>3 | 5 |  |
| 4           | 2<br>6      | 4<br>9      | 5      | 3 | 4<br>8 | 6<br>9 | 7           | 1      | 8<br>9 | 8<br>9      | 2      |   |  |
| 3           | 2<br>7      | 8           | 5      | 1 | 2<br>9 | 5      | 4           | 6      | 2<br>5 | 7           | 9      |   |  |
| 1<br>2<br>4 | 1<br>2<br>6 | 3<br>6      | 7      | 1 | 5<br>8 | 5<br>9 | 2<br>3      | 2<br>3 | 6<br>8 | 5<br>9      | 4      |   |  |
| 1<br>4      | 6           | 8           | 9      | 1 | 5<br>7 | 4<br>5 | 4<br>5      | 3      | 2      | 1<br>5      | 6      |   |  |
| 5           | 1<br>2<br>4 | 3<br>6      | 1<br>3 | 6 | 4<br>7 | 2<br>3 | 2<br>3      |        | 1      | 1           |        |   |  |

|        |        |             |        |        |        |             |             |        |             |             |        |        |   |
|--------|--------|-------------|--------|--------|--------|-------------|-------------|--------|-------------|-------------|--------|--------|---|
| 1      | 4      |             | 3      | 2<br>3 | 5<br>9 | 4<br>5<br>6 | 4<br>7      | 2<br>3 | 2<br>3      |             | 6<br>9 | 2<br>7 | 8 |
| 4      | 3      | 2           | 4      | 7      | 9      | 3           | 1<br>4      | 1<br>6 | 1<br>3      | 8           | 6<br>9 | 5      |   |
| 9      | 5      | 6           | 8      | 1      | 7      | 1<br>2<br>3 | 1<br>2<br>3 | 4      | 1<br>2      |             |        |        |   |
| 2<br>4 | 1<br>5 | 4<br>8      | 2<br>9 | 6      | 3      | 1<br>8      | 2<br>5      | 7      | 2           |             |        |        |   |
| 6      | 1      |             | 2<br>3 | 5      | 1<br>7 | 5<br>8      | 1           | 4      | 2<br>3      | 9           |        |        |   |
| 5      | 3      | 7           | 5<br>8 | 4      | 2      | 9           | 6           | 1<br>5 | 3<br>8      | 1<br>3      |        |        |   |
| 4      | 7      | 6           | 4<br>7 | 2<br>3 | 4      | 7           | 5           | 9      | 1<br>2<br>3 | 1<br>2<br>3 | 8      |        |   |
| 4      | 5      | 4           | 9      | 1      | 4      | 8<br>9      | 2<br>3      | 7      | 5<br>8      | 2<br>3      | 6      |        |   |
| 8      | 3      | 1<br>2<br>5 | 7      | 9      | 2      | 6           | 2<br>6      | 1<br>2 | 1<br>5      | 2<br>5      | 4      |        |   |

|             |             |             |        |        |        |   |        |        |   |   |   |   |   |
|-------------|-------------|-------------|--------|--------|--------|---|--------|--------|---|---|---|---|---|
| 1<br>4      | 2<br>5      | 1<br>8      | 2<br>4 | 2<br>5 | 2<br>8 | 9 | 4      | 4      | 6 | 3 |   |   |   |
|             | 2           | 8           | 9      | 6      | 8      | 4 | 1<br>5 | 1<br>5 | 7 |   |   |   |   |
| 4<br>5      | 4           | 6           | 4<br>7 | 3      | 5      | 1 | 2      | 8      | 4 | 6 | 9 |   |   |
| 2<br>4      | 2<br>8      | 4<br>8      | 2<br>8 | 2<br>3 | 5      | 6 | 4      | 5      | 9 | 1 |   |   |   |
| 7           | 3           | 1<br>2<br>4 | 8      | 2      | 5      | 5 | 6      | 4      | 5 | 9 | 8 | 9 |   |
| 1<br>2      | 5           | 6           | 4      | 2<br>3 | 1<br>2 | 3 | 7      |        | 8 | 9 |   |   |   |
| 1<br>2<br>4 | 1<br>2<br>8 | 5           |        | 3      | 4      | 3 | 6      | 7      | 1 | 3 | 4 | 6 | 8 |
| 3           | 7           | 9           | 1      | 4      | 5      | 2 | 8      | 4      | 5 | 6 | 4 | 5 | 6 |
| 6           | 1<br>4      | 1<br>8      | 9      | 7      | 5      | 3 | 1      | 3      | 1 | 3 | 2 |   |   |

|        |        |        |             |   |        |        |   |             |   |        |   |   |   |
|--------|--------|--------|-------------|---|--------|--------|---|-------------|---|--------|---|---|---|
| 8      | 1<br>7 | 5<br>9 | 1<br>2<br>5 | 4 | 1<br>7 | 3<br>9 | 6 | 1<br>2<br>3 | 5 | 1<br>5 | 3 |   |   |
| 1      |        | 3      | 1<br>5      | 2 | 1      | 1      | 4 | 5           | 6 | 9      | 1 | 5 | 6 |
| 1<br>2 | 6      | 4      | 1<br>2      | 6 | 1      | 3      | 5 | 1           | 1 | 2      | 3 | 7 | 8 |
| 1<br>4 |        | 6      | 9           | 1 | 3      | 1      | 3 | 5           |   | 3      | 2 | 4 | 3 |
| 3      | 1<br>7 | 5      | 4<br>5      | 1 | 7      | 8      | 9 | 4           | 5 | 6      | 8 | 9 | 4 |
| 4      | 2      | 5      | 4<br>5      | 6 | 4      | 8      | 9 | 5           | 1 | 7      |   |   |   |
| 5      | 2      | 4      | 6           | 1 | 7      | 8      | 9 | 3           | 6 | 4      | 5 | 8 | 2 |
| 1      | 4      | 1      | 1           | 1 | 5      | 4      | 7 | 8           | 2 | 9      | 7 | 8 | 9 |
| 1      | 4      | 6      | 7           | 8 | 3      | 1      | 5 | 4           | 6 | 2      | 1 | 5 | 8 |



|                       |                     |                       |                     |                     |                       |   |                     |                       |
|-----------------------|---------------------|-----------------------|---------------------|---------------------|-----------------------|---|---------------------|-----------------------|
| 3                     | 5                   | 6                     | <sup>1</sup><br>8   | 7                   | <sup>1</sup><br>8     | 2 | 9                   | 4                     |
| <sup>2</sup><br>9     |                     | <sup>2</sup><br>7     | <sup>3</sup><br>6   | 4                   | <sup>3</sup><br>6     | 8 | 5                   | 1                     |
| 8                     | 4                   | 1                     | 9                   | 5                   | 2                     | 7 | <sup>3</sup><br>6   | <sup>3</sup><br>6     |
| <sup>2</sup><br>6     | 1                   | <sup>2 3</sup><br>8   | 4                   | <sup>3</sup><br>6   | 5                     | 9 | <sup>3</sup><br>7 8 | <sup>3</sup><br>7 8   |
| 7                     | <sup>3</sup><br>9   | 4                     | <sup>1 3</sup><br>8 | <sup>1 3</sup><br>9 | <sup>1 3</sup><br>8 9 | 6 | 2                   | 5                     |
| <sup>5 6</sup><br>9   | <sup>3</sup><br>8 9 | <sup>3</sup><br>5 8 9 | 2                   | <sup>3</sup><br>6 9 | 7                     | 4 | 1                   | <sup>3</sup><br>8     |
| <sup>1</sup><br>4 5 6 | 2                   | <sup>3</sup><br>7 8 9 | <sup>1 3</sup><br>7 | <sup>1 3</sup><br>6 | <sup>1 3</sup><br>9   | 5 | 4                   | <sup>6</sup><br>7 8 9 |
| <sup>1</sup><br>4 5 6 | <sup>6</sup><br>9 7 | <sup>5</sup><br>9 7   | <sup>1</sup><br>7   | 8                   | <sup>4</sup><br>6 9   | 3 | <sup>6</sup><br>7   | 2                     |
| 4                     | <sup>6</sup><br>9   | <sup>3</sup><br>7 8 9 | 5                   | 2                   | <sup>4</sup><br>6 9   | 1 | <sup>6</sup><br>7 8 | <sup>6</sup><br>7 8 9 |

|                         |                       |                       |                       |                     |                       |                     |                       |                       |                     |                   |
|-------------------------|-----------------------|-----------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|-----------------------|---------------------|-------------------|
| <sup>1</sup><br>8 9     | <sup>3</sup><br>6     | 5                     | <sup>1</sup><br>4     | <sup>3</sup><br>6   | <sup>1 2</sup><br>6 9 | <sup>2 3</sup><br>6 | <sup>1 2 3</sup><br>7 | <sup>1</sup><br>8 9   | 4                   | 7                 |
| <sup>1</sup><br>4 5 6   | <sup>3</sup><br>7 9   | <sup>1</sup><br>4     | <sup>1</sup><br>4     | <sup>3</sup><br>6   | <sup>1</sup><br>4     | 8                   | <sup>1</sup><br>4 5   | <sup>3</sup><br>5 9   | <sup>1</sup><br>5   | <sup>3</sup><br>2 |
| <sup>1</sup><br>8 9     | <sup>3</sup><br>4     | 2                     | <sup>1</sup><br>4     | <sup>3</sup><br>7   | <sup>1</sup><br>4     | <sup>3</sup><br>4   | <sup>1</sup><br>4 5   | <sup>3</sup><br>5 8 9 | <sup>1</sup><br>5   | <sup>3</sup><br>6 |
| 4                       | <sup>1</sup><br>9     | <sup>1 2</sup><br>7   | 3                     | 5                   | 6                     | <sup>2</sup><br>8 9 | 7                     | <sup>8 9</sup><br>1   | <sup>8 9</sup><br>3 |                   |
| <sup>2</sup><br>7       | 6                     | 5                     | <sup>2</sup><br>7 8   | 9                   | <sup>2</sup><br>7 8   | 4                   | <sup>1 3</sup><br>1   | <sup>1 3</sup><br>3   |                     |                   |
| <sup>2</sup><br>7       | 3                     | 8                     | <sup>1 2</sup><br>4 7 | <sup>2</sup><br>4   | <sup>1 2</sup><br>4 7 | <sup>2</sup><br>5 9 | 6                     | <sup>5</sup><br>9     |                     |                   |
| <sup>2 3</sup><br>4 7 8 | <sup>2 3</sup><br>4 7 | 5                     | 1                     | <sup>4</sup><br>8   | <sup>2 3</sup><br>6   | 6                   | <sup>3</sup><br>8 9   | <sup>3</sup><br>8 9   |                     |                   |
| <sup>1 2 3</sup><br>5 6 | <sup>1</sup><br>8     | <sup>1 2 3</sup><br>6 | <sup>2</sup><br>8     | <sup>2 3</sup><br>6 | 9                     | 7                   | <sup>1</sup><br>5 8   | <sup>3</sup><br>1     | 4                   |                   |
| <sup>1</sup><br>5 6     | <sup>3</sup><br>4     | 9                     | <sup>4</sup><br>8     | 7                   | <sup>4</sup><br>8     | <sup>3</sup><br>1   | <sup>3</sup><br>5 8   | <sup>1</sup><br>5     | <sup>3</sup><br>2   |                   |

|                   |                       |                         |                         |                       |                   |                       |                         |                       |                   |                   |
|-------------------|-----------------------|-------------------------|-------------------------|-----------------------|-------------------|-----------------------|-------------------------|-----------------------|-------------------|-------------------|
| <sup>1</sup><br>7 | <sup>1 2</sup><br>4 6 | 3                       | 5                       | <sup>4</sup><br>7     | <sup>6</sup><br>9 | 2                     | <sup>2</sup><br>6       | 8                     | <sup>4</sup><br>6 | <sup>2</sup><br>9 |
| 8                 | <sup>2</sup><br>4 6   | <sup>4 5</sup><br>9     | <sup>3</sup><br>4       | <sup>3</sup><br>4 6   | 1                 | <sup>2</sup><br>5 6   | 7                       | <sup>2</sup><br>4 5 6 | <sup>2</sup><br>9 |                   |
| <sup>5</sup><br>7 | <sup>2</sup><br>4 6   | <sup>4 5</sup><br>9 7   | <sup>4</sup><br>7 8     | <sup>4</sup><br>7 8   | <sup>6</sup><br>9 | 3                     | <sup>2</sup><br>4 5     | 1                     |                   |                   |
| 2                 | <sup>4</sup><br>8 9   | <sup>3</sup><br>4 5 8 9 | <sup>3</sup><br>8 9     | 1                     | <sup>5</sup><br>3 | <sup>5 6</sup><br>7 8 | <sup>4 5</sup><br>7     | <sup>3</sup><br>4 5 6 | <sup>3</sup><br>7 |                   |
| <sup>1</sup><br>5 | 7                     | <sup>1</sup><br>5 8     | <sup>3</sup><br>8       | 2                     | 4                 | 9                     | <sup>1</sup><br>5       | <sup>3</sup><br>5 6   |                   |                   |
| 6                 | <sup>1</sup><br>4     | <sup>3</sup><br>4 5 8 9 | <sup>3</sup><br>8 9     | <sup>5</sup><br>8 9   | 7                 | <sup>1 2</sup><br>5 8 | <sup>1 2 3</sup><br>4 5 | <sup>2 3</sup><br>4 5 |                   |                   |
| 3                 | <sup>1</sup><br>9     | 2                       | <sup>1</sup><br>4 7     | <sup>4 5</sup><br>7 9 | 6                 | <sup>1</sup><br>7     | <sup>5</sup><br>9       | 8                     |                   |                   |
| 4                 | 5                     | 6                       | <sup>1 2 3</sup><br>7 9 | <sup>3</sup><br>7 9   | 8                 | <sup>1 2</sup><br>7   | <sup>1 2 3</sup><br>9 7 | <sup>2 3</sup><br>9   |                   |                   |
| <sup>1</sup><br>7 | <sup>1</sup><br>8 9   | <sup>1</sup><br>7 8 9   | <sup>1 2 3</sup><br>9   | <sup>3</sup><br>5 9   | <sup>3</sup><br>5 | 4                     | <sup>2 3</sup><br>5 9   |                       |                   |                   |

|                   |                     |                       |                     |                       |                       |                       |                       |                       |                     |                   |
|-------------------|---------------------|-----------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|-------------------|
| 2                 | <sup>4</sup><br>7   | <sup>3</sup><br>5     | 8                   | <sup>1</sup><br>4     | <sup>3</sup><br>9     | 6                     | <sup>4</sup><br>9     | <sup>3</sup><br>4     | <sup>1</sup><br>9 7 | <sup>1</sup><br>3 |
| <sup>1</sup><br>4 | <sup>3</sup><br>9   | <sup>1</sup><br>4     | <sup>2 3</sup><br>4 | 7                     | <sup>1 2 3</sup><br>4 | 8                     | <sup>5 6</sup><br>5 6 |                       |                     |                   |
| 8                 | <sup>1</sup><br>4   | <sup>3</sup><br>7     | <sup>6</sup><br>9   | <sup>3</sup><br>4     | 5                     | <sup>1</sup><br>4     | <sup>3</sup><br>9 7   | <sup>1</sup><br>3     |                     |                   |
| <sup>1</sup><br>4 | <sup>3</sup><br>6   | <sup>1</sup><br>4 5 6 | 2                   | <sup>5</sup><br>7     | <sup>3</sup><br>8 9   | <sup>4 5</sup><br>7 9 | <sup>3</sup><br>9     | <sup>1</sup><br>8 9   | <sup>1</sup><br>3   |                   |
| 9                 | 8                   | <sup>1</sup><br>4     | <sup>2 3</sup><br>4 | 6                     | <sup>2 3</sup><br>4   | 5                     | 7                     | <sup>1 2 3</sup><br>1 |                     |                   |
| <sup>3</sup><br>7 | <sup>3</sup><br>5 6 | <sup>3</sup><br>7     | 1                   | <sup>2 3</sup><br>8 9 | <sup>2 3</sup><br>7 9 | <sup>3</sup><br>6     | <sup>2</sup><br>8 9   | 4                     |                     |                   |
| <sup>1</sup><br>7 | <sup>3</sup><br>2   | <sup>1</sup><br>7     | 6                   | <sup>1</sup><br>9     | 8                     | <sup>4</sup><br>9     | <sup>4 5</sup><br>9   | <sup>5</sup><br>9     |                     |                   |
| 5                 | <sup>1</sup><br>8 9 | <sup>3</sup><br>9     | 4                   | <sup>1 2 3</sup><br>9 | 7                     | <sup>2</sup><br>8     | <sup>6</sup><br>8     | <sup>2</sup><br>6     |                     |                   |
| <sup>4</sup><br>6 | <sup>4</sup><br>6   | <sup>6</sup><br>8 9   | <sup>5</sup><br>7   | <sup>2</sup><br>9 7   | 5                     | 1                     | <sup>3</sup><br>8     |                       |                     |                   |

|                       |                       |                       |                       |                         |                           |                       |                         |                         |  |  |
|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|---------------------------|-----------------------|-------------------------|-------------------------|--|--|
| <sup>1</sup><br>7     | <sup>1 2 3</sup><br>7 | <sup>2 3</sup><br>7   | <sup>1 2</sup><br>7   | 6                       | <sup>1 2</sup><br>7 8 9   | 4                     | <sup>1 2 3</sup><br>5 9 | <sup>1 2 3</sup><br>5 8 |  |  |
| 5                     | <sup>1 2</sup><br>4 7 | 8                     | 3                     | <sup>1 2</sup><br>7 9   | <sup>1 2</sup><br>4 7 9   | <sup>1</sup><br>7     | <sup>1 2</sup><br>6 9   | <sup>1 2</sup><br>6     |  |  |
| <sup>1</sup><br>4     | <sup>6</sup><br>7     | 9                     | <sup>2 3</sup><br>4 7 | <sup>1 2</sup><br>4 7   | <sup>1 2</sup><br>4 5 7 8 | <sup>1</sup><br>7     | <sup>1 2 3</sup><br>5 8 | <sup>1 2 3</sup><br>5 8 |  |  |
| <sup>4</sup><br>6     | 5                     | 1                     | <sup>2</sup><br>4     | <sup>2</sup><br>6 9     | <sup>2</sup><br>4 9       | 3                     | 8                       | 7                       |  |  |
| 3                     | <sup>4</sup><br>7 8   | <sup>4</sup><br>7 9   | <sup>6</sup><br>7 9   | 5                       | <sup>1</sup><br>4 7 8 9   | 2                     | <sup>1</sup><br>6 9     | <sup>1</sup><br>6       |  |  |
| <sup>6</sup><br>7 8 9 | <sup>2</sup><br>7 8   | <sup>2</sup><br>7 9   | <sup>1</sup><br>7 9   | <sup>6</sup><br>7 8 9   | 3                         | <sup>1</sup><br>5 6 9 | 4                       | <sup>1</sup><br>5 6     |  |  |
| <sup>1</sup><br>7 8 9 | 6                     | <sup>3</sup><br>7 9   | 5                     | <sup>1 2 3</sup><br>7 9 | <sup>1 2</sup><br>7 9     | <sup>1</sup><br>8     | <sup>1 2 3</sup><br>4   |                         |  |  |
| <sup>1</sup><br>9     | <sup>1</sup><br>3     | <sup>5</sup><br>9     | 8                     | 4                       | <sup>1 2</sup><br>9       | <sup>1</sup><br>5 6   | 7                       | <sup>1 2 3</sup><br>5 6 |  |  |
| 2                     | <sup>1</sup><br>4 7 8 | <sup>3</sup><br>4 5 7 | <sup>1</sup><br>7     | <sup>1</sup><br>7       | 6                         | <sup>1</sup><br>5 8   | <sup>1</sup><br>5       | 9                       |  |  |

|                       |                     |                     |                     |                       |                         |                         |                       |                         |                           |  |
|-----------------------|---------------------|---------------------|---------------------|-----------------------|-------------------------|-------------------------|-----------------------|-------------------------|---------------------------|--|
| <sup>2 3</sup><br>7   | <sup>2</sup><br>8   | <sup>6</sup><br>7 8 | <sup>4</sup><br>6   | 1                     | <sup>4</sup><br>8       | <sup>2</sup><br>6       | <sup>2 3</sup><br>4 7 | 5                       | 9                         |  |
| 4                     | <sup>2</sup><br>6 9 | <sup>1</sup><br>7 9 | <sup>3</sup><br>6   | 5                     | <sup>2</sup><br>6 9     | 8                       | <sup>2 3</sup><br>7 6 | <sup>1 2 3</sup><br>4 6 |                           |  |
| <sup>2 3</sup><br>2   | 5                   | <sup>1</sup><br>8 9 | 7                   | <sup>2 3</sup><br>4 8 | <sup>2</sup><br>6 4 8 9 | <sup>1 2 3</sup><br>4 6 | <sup>2 3</sup><br>4 6 | <sup>1 2 3</sup><br>4 6 |                           |  |
| <sup>2</sup><br>7     | <sup>2</sup><br>6   | <sup>6</sup><br>7   | 5                   | 9                     | <sup>1</sup><br>4       | <sup>1</sup><br>4       | <sup>3</sup><br>8     | <sup>1</sup><br>4       | <sup>3</sup><br>3         |  |
| <sup>5</sup><br>8 9   | 1                   | <sup>5</sup><br>8 9 | 2                   | <sup>4</sup><br>7 8   | <sup>6</sup><br>7 9     | 3                       | <sup>4 5</sup><br>7 9 | <sup>4</sup><br>6 9     | <sup>4 5 6</sup><br>4 5 6 |  |
| <sup>5</sup><br>8 9   | 3                   | 4                   | <sup>1</sup><br>7 8 | <sup>6</sup><br>7 8   | <sup>1</sup><br>7 9     | <sup>1 2</sup><br>5 9   | <sup>2</sup><br>6 9   | <sup>1 2</sup><br>5 6   |                           |  |
| <sup>1</sup><br>6     | <sup>4</sup><br>9   | 3                   | 8                   | <sup>1</sup><br>7     | <sup>6</sup><br>4 5 9   | <sup>2</sup><br>4       | <sup>2</sup><br>4 5   | <sup>2</sup><br>4 5     |                           |  |
| <sup>1</sup><br>5 8 9 | <sup>4</sup><br>8 9 | <sup>5</sup><br>8 9 | <sup>1</sup><br>4   | <sup>3</sup><br>4     | <sup>2 3</sup><br>4 5   | <sup>1 2</sup><br>4 5   | 6                     | <sup>3</sup><br>9       | 7                         |  |
| <sup>5 6</sup><br>5 6 | 7                   | 2                   | 9                   | <sup>4</sup><br>6     | <sup>3</sup><br>4 5 6   | <sup>4</sup><br>3       | 1                     | 8                       |                           |  |

|               |             |                 |             |                 |                 |               |               |               |
|---------------|-------------|-----------------|-------------|-----------------|-----------------|---------------|---------------|---------------|
| 1 2 3<br>6    | 1 2<br>8 9  | 1 2<br>8 9      | 4           | 6<br>7 9        | 7 8 9           | 5             | 1 3<br>7 9    | 2 3<br>7 8 9  |
| 1 2<br>5 6    | 7           | 1 2<br>5<br>8 9 | 5 6<br>8    | 5 6<br>9        | 3               | 4<br>8 9      | 1<br>4        | 2<br>9 8 9    |
| 5<br>3        | 8 9         | 4               | 2           | 1               | 5<br>7 8 9      | 3             | 6             | 3<br>7 8 9    |
| 2<br>4 6<br>7 | 3           | 2<br>6          | 5 6         | 8               | 4 5<br>9        | 1             | 4 5<br>7 9    | 2<br>5<br>7 9 |
| 8             | 1 2<br>4    | 1 2             | 7           | 2<br>4 5<br>9   | 1 2<br>4 5<br>9 | 4<br>2 3<br>9 | 4 5<br>3<br>9 | 6             |
| 9             | 5           | 1 2<br>7 6      | 3           | 2<br>4 6<br>4   | 1 2<br>4        | 2<br>4 7<br>8 | 4<br>7        | 2<br>7 8      |
| 2<br>4 5<br>7 | 2<br>4<br>8 | 2<br>5<br>7 8   | 9           | 2 3<br>4 5<br>7 | 2<br>4 5<br>7 8 | 6             | 5<br>7        | 3<br>1        |
| 1<br>4 5<br>7 | 6           | 1<br>5<br>7 8 9 | 1<br>5<br>8 | 4 5<br>7        | 4 5<br>7 8      | 3<br>7 9      | 2<br>5<br>7 9 | 3             |
| 1 2<br>5      | 1 2<br>9    | 3               | 1<br>5      | 2<br>5<br>7     | 6               | 7 9           | 8             | 4             |

|                 |               |                  |                    |                 |                   |                    |                      |                 |
|-----------------|---------------|------------------|--------------------|-----------------|-------------------|--------------------|----------------------|-----------------|
| 6               | 2<br>8 9      | 2<br>7 9         | 2<br>7 8 9         | 4               | 1 5<br>7 8 9      | 1 2<br>5           | 1 2<br>9             | 3               |
| 4<br>8 9        | 1             | 4<br>2 3<br>9    | 2 3<br>6<br>8 9    | 2<br>5 6<br>8   | 6<br>4 6<br>8 9   | 4<br>2<br>6        | 7                    | 5 6<br>9        |
| 4<br>7 9        | 4<br>2 3<br>9 | 5                | 2 3<br>6<br>7 9    | 1 2<br>6<br>7   | 1<br>6<br>7 9     | 8                  | 1 2<br>4 6<br>9      | 1<br>6<br>9     |
| 1<br>4<br>7 8 9 | 4<br>6<br>8 9 | 4<br>6<br>7 9    | 5                  | 6<br>7 8        | 2                 | 1<br>3<br>4 6<br>7 | 1<br>3<br>4 6<br>8 9 | 1<br>6<br>7 8 9 |
| 3               | 5 6<br>8      | 1<br>7           | 6<br>4 6<br>7 8    | 9               | 4<br>6<br>7 8     | 1<br>5 6<br>7      | 1<br>6<br>8          | 2               |
| 4 5<br>7 8 9    | 4<br>6<br>8 9 | 4<br>6<br>7 9    | 1                  | 6<br>7 8        | 3                 | 4<br>6<br>7        | 4<br>6<br>8 9        | 5 6<br>7 8 9    |
| 1<br>4 5<br>7   | 3<br>4<br>6   | 8                | 2<br>4<br>6<br>7   | 1 2<br>5 6<br>7 | 1<br>4<br>6<br>7  | 9                  | 2 3<br>1<br>6        | 6               |
| 1<br>4<br>9     | 7             | 1<br>4<br>6<br>9 | 3<br>4<br>6<br>8 9 | 1 2<br>6<br>8   | 4<br>6<br>8 9     | 2 3<br>5<br>8      | 5<br>1<br>6          | 6               |
| 2               | 5 6<br>9      | 1<br>6<br>9      | 6<br>7 8 9         | 3               | 1<br>5 6<br>7 8 9 | 1<br>6<br>8        | 1<br>6<br>8          | 4               |

|               |                   |             |                   |                   |               |             |               |               |
|---------------|-------------------|-------------|-------------------|-------------------|---------------|-------------|---------------|---------------|
| 5             | 1 2<br>7 8 9      | 1 2<br>8    | 1 2<br>4 6<br>8 9 | 1 2<br>4 8<br>9   | 3             | 1<br>4<br>7 | 1<br>6<br>7   | 1<br>4<br>7   |
| 1<br>4<br>7 8 | 1<br>3<br>6       | 1<br>3<br>6 | 1<br>3<br>8       | 5                 | 1<br>4<br>8   | 4<br>8      | 2             | 9<br>4<br>7   |
| 1 2 3<br>4    | 1 2 3<br>9        | 1 2 3<br>9  | 1 2<br>4 6<br>9   | 7                 | 2<br>4        | 1<br>4 5 6  | 8             | 1<br>4 5<br>3 |
| 1 2 3<br>8    | 1 2 3<br>8        | 5           | 7                 | 2<br>4<br>8 9     | 2<br>4 6<br>8 | 1<br>4<br>6 | 1<br>6<br>4   | 9             |
| 7 8           | 4                 | 6           | 8 9               | 5<br>8 9          | 1             | 3           | 2             | 5<br>7 9      |
| 1 2<br>7      | 1 2<br>7          | 9           | 3                 | 2<br>4 5          | 2<br>4 5 6    | 8           | 1<br>5 6<br>7 | 1<br>4 5<br>7 |
| 1 2<br>6<br>8 | 1 2<br>5 6<br>8   | 7           | 1 2<br>4<br>8     | 1 2 3<br>4 5<br>8 | 2<br>4 5<br>8 | 9           | 1<br>5<br>8   | 2<br>3        |
| 1 2<br>8      | 1 2<br>5<br>8     | 4           | 1 2<br>8          | 1 2 3<br>5<br>8   | 9             | 1<br>5<br>7 | 1<br>5<br>3   | 6             |
| 1 2 3<br>8 9  | 1 2 3<br>5<br>8 9 | 1 2 3<br>8  | 1 2<br>8          | 6                 | 7             | 1<br>5      | 4             | 2<br>8        |

|               |               |          |               |                 |                 |             |                    |
|---------------|---------------|----------|---------------|-----------------|-----------------|-------------|--------------------|
| 2<br>8 9      | 5             | 7 8 9    | 2<br>7        | 1<br>2 3<br>7   | 4               | 6           | 3<br>7 8           |
| 1 2<br>6<br>8 | 2<br>6<br>7 8 | 4        | 2<br>5 6<br>7 | 9               | 2 3<br>5 6<br>7 | 1<br>3<br>5 | 1<br>3<br>5<br>7 8 |
| 1<br>6<br>7   | 6<br>3        | 4        | 8             | 5 6<br>7        | 2               | 9           | 1<br>5<br>7        |
| 2 3<br>8      | 2 3<br>7 8    | 7 8      | 2<br>6        | 5               | 1               | 9           | 4<br>7             |
| 2<br>9        | 2<br>7 9      | 1        | 3             | 4               | 2<br>6          | 5           | 8<br>7             |
| 5             | 4             | 6        | 8 9           | 7               | 8 9             | 1<br>3      | 2<br>1 3           |
| 3<br>6<br>8 9 | 3<br>6<br>8 9 | 5<br>8 9 | 1             | 2 3<br>4<br>8 9 | 7               | 4 5<br>4 5  | 2<br>4 5           |
| 4             | 1             | 2        | 5<br>7        | 6               | 5<br>7          | 8           | 3<br>9             |
| 7             | 3<br>8 9      | 5<br>8 9 | 8 9           | 2 3<br>4<br>8 9 | 6               | 1           | 2<br>4 5           |

|                   |                 |             |                   |                   |               |                  |             |                    |
|-------------------|-----------------|-------------|-------------------|-------------------|---------------|------------------|-------------|--------------------|
| 1 3<br>7 8 9      | 4               | 1<br>6<br>9 | 2 3<br>7 9        | 2 3<br>7 9        | 3             | 5                | 1 3<br>9    | 6<br>8             |
| 3<br>7 8 9        | 3<br>6<br>7 8   | 6<br>9      | 4<br>7 9          | 5                 | 1             | 2                | 4<br>9      | 6<br>8             |
| 1 2 3<br>9        | 5               | 6           | 8                 | 4                 | 3<br>4        | 1 3<br>9         | 7           | 1<br>4             |
| 1 2<br>4 6        | 5               | 7           | 1 2<br>4<br>8     | 1 2<br>6 4<br>8   | 1<br>4<br>8 9 | 1 2<br>4<br>9    | 3           |                    |
| 1 2 3<br>4 6      | 9               | 8           | 5                 | 1 2 3<br>6 4<br>6 | 3<br>4        | 1 2<br>4         | 7           |                    |
| 1 2 3<br>4        | 1 2 3<br>4      | 2<br>4      | 1 2 3<br>4<br>7 8 | 1 2 3<br>7        | 9             | 1<br>4<br>8      | 6           | 5                  |
| 5                 | 1<br>7          | 1<br>6<br>9 | 1<br>7 9          | 4                 | 2             | 1<br>3<br>6<br>9 | 8           | 1<br>9             |
| 1 2<br>4<br>8 9   | 1 2<br>6 4      | 2           | 1<br>8 9          | 3<br>6<br>9       | 5             | 7                | 1<br>4<br>9 | 1 2<br>3<br>4<br>9 |
| 1 2<br>4<br>7 8 9 | 1 2<br>6<br>7 8 | 3           | 1<br>7 8 9        | 1<br>6<br>7 9     | 6<br>7 8      | 1<br>4<br>6<br>9 | 5           | 1 2<br>4<br>9      |

|            |            |             |             |               |               |               |            |                      |
|------------|------------|-------------|-------------|---------------|---------------|---------------|------------|----------------------|
| 1<br>9     | 8          | 1<br>6<br>9 | 3           | 7             | 4             | 1 2<br>6      | 5          | 1 2<br>6             |
| 3          | 2          | 7           | 1<br>6<br>9 | 1<br>5 6<br>9 | 5<br>9        | 1<br>4<br>6   | 8          | 1<br>4<br>6          |
| 4 5        | 1<br>6 4 5 | 8           | 1<br>6      | 2             | 3             | 9             | 7          |                      |
| 2<br>4     | 1<br>7     | 2<br>6 4    | 1<br>6<br>9 | 8             | 3<br>7 5<br>9 | 1<br>6<br>7   | 1 3<br>6   | 1 3<br>5 6<br>9      |
| 1<br>5     | 1<br>7     | 1<br>6      | 2<br>5 6    | 1<br>9 7      | 3<br>9        | 8             | 4          | 1<br>3<br>6<br>9     |
| 8          | 9          | 3           | 1<br>4      | 1<br>4 5 6    | 5<br>7        | 1 2<br>6<br>7 | 1 2<br>6   | 1 2<br>5 6           |
| 6          | 4          | 2<br>9      | 5           | 3             | 1             | 2<br>7 9      | 2<br>7     | 8                    |
| 1 2<br>7 9 | 5          | 1 2<br>9    | 4<br>7 9    | 2<br>4        | 8             | 1 2<br>4<br>9 | 1 2 3<br>6 | 1 2 3<br>4<br>6<br>9 |
| 1 2<br>7 9 | 3          | 8           | 4<br>7      | 2<br>4        | 6             | 5             | 1 2<br>4   | 1 2<br>9             |

|     |     |     |     |     |     |       |       |       |
|-----|-----|-----|-----|-----|-----|-------|-------|-------|
| 1   | 5   | 2 3 | 1 3 | 4   | 2 3 | 8     | 1 3   | 1 3   |
| 7   |     | 9   | 9   |     | 6 9 |       | 7     | 6     |
| 1   | 6   | 2 3 |     | 5   | 1 2 | 2 3   | 1 3   | 9     |
| 4   |     |     |     | 7 8 | 8   | 4     | 4     |       |
| 1   | 1   | 2 3 | 1 3 | 1 2 | 2 3 | 2 3   | 1 3   | 1 3   |
| 4   | 4   |     |     | 6   | 6   | 4 5 6 | 4 5 6 | 4 6   |
| 7 8 | 7 8 | 9   | 8 9 | 7 8 | 8 9 | 7     | 7     |       |
| 2   | 2   |     | 5 6 | 4   | 5 6 | 5 6   | 1     | 4 5 6 |
| 7   | 7   |     | 8 9 | 8   | 8 9 | 8 9   | 4     | 8     |
| 4   | 4   | 5 6 |     | 2 3 | 1   | 4 5 6 | 4 5 6 | 7     |
| 8 9 | 8 9 |     |     |     |     | 8 9   |       |       |
| 3   | 4   | 1   | 4   | 5 6 | 7   | 4 5 6 | 4 5 6 | 2     |
|     | 8 9 |     | 8 9 | 8   |     | 9     | 8 9   |       |
| 5 6 | 1 2 |     | 1 3 |     | 2 3 | 3 1   | 3 1   | 3     |
|     |     | 4   | 8   | 9   | 5   | 6     | 6     | 6     |
| 1 2 |     | 3 7 | 6   | 1 2 | 2   | 7     | 7 8   | 8     |
| 9   |     |     | 8   | 4   | 8   | 4     | 1     | 5     |
|     | 1   |     | 1   | 5   | 4 5 | 3     | 8 9   |       |
| 5 6 | 9   | 8   | 7   |     | 4   | 3     | 1     | 3     |
|     |     |     |     |     | 6 9 | 6 9   | 4     | 6     |

|       |       |       |       |       |     |     |       |       |
|-------|-------|-------|-------|-------|-----|-----|-------|-------|
| 4     | 3     | 3     | 5     |       | 6   | 4   | 3     |       |
| 7     | 9     | 7     | 9     |       | 7   | 6   | 6     |       |
| 8     | 1 2 3 | 2 3   | 1 2   | 1 2 3 | 1 2 | 4   | 6     |       |
| 7     |       | 4     | 6     | 7     | 6   | 4   | 6     |       |
| 1 2 3 | 1 2 3 | 2 3   | 1 2   | 1 2 3 | 1 2 | 7   | 8     | 3     |
| 4     |       | 4     | 6     | 5 6   | 4   | 6   | 4 5 6 | 4 6   |
|       | 9     | 9     | 9     | 9     | 9   | 9   | 9     |       |
| 1 2 3 | 1 2 3 | 2 3   | 4     | 1 2   | 1 2 | 3   | 1     | 3     |
| 5     | 5     | 7     | 7     | 6     | 6   | 8   | 7     | 6     |
| 7     | 7     |       |       | 7     | 9   | 9   | 7     | 8     |
| 6     | 4     | 2 3   | 1 2   | 1 2   | 1 2 | 9   | 1     | 5     |
|       |       | 7 8   | 7 8   | 7     |     |     | 3     |       |
| 1     | 1     |       | 1     | 6     | 5   | 3   | 4     | 2     |
| 7     | 9     | 7 8 9 | 7 8 9 | 7 8   | 6   |     | 7     | 6     |
| 2 3   |       | 2 3   | 1 2   | 1 2   | 1 2 | 2 3 | 2 3   | 3     |
| 4     | 6     | 4     | 5     | 4     | 4 5 | 8   | 7     | 7 8 9 |
| 7     | 9     | 7 8 9 |       |       |     |     |       |       |
| 4     | 2     | 2     | 1     | 3     | 8   | 4   | 2     | 5     |
| 7     | 9     | 7     | 9     |       | 6   | 6   | 7     | 9     |
| 2 3   | 2 3   | 2 3   | 9     | 2     | 7   | 1   | 4     | 3     |
| 5     | 5     | 8     |       | 6     |     |     | 8     | 6     |

|       |       |     |   |   |     |     |       |       |
|-------|-------|-----|---|---|-----|-----|-------|-------|
| 1 2 3 | 1 2 3 | 2   |   | 8 | 5   | 4   | 1 3   | 6     |
| 7     |       | 7   | 7 | 9 |     |     | 7     | 9     |
| 5     | 3     | 3   |   |   | 2   | 4   | 3     | 3     |
| 7 8   | 4 5   | 4   | 6 |   | 1   | 5   | 7 8 9 | 5     |
|       | 1     | 4   | 6 | 4 | 3   | 2   | 1     | 5     |
| 9     | 4 5   | 4   | 6 | 4 | 4   | 6   | 7 8   |       |
|       | 8     | 7 8 | 7 |   |     |     |       |       |
| 2     | 2     | 1   | 5 | 3 | 7   | 6   | 3     | 2 3   |
| 5     | 8     |     | 8 |   |     |     | 9     | 4     |
| 6     | 2     | 2   | 1 | 3 | 2 3 | 9   | 1     | 5     |
| 4     | 8     | 4   | 8 | 8 |     | 7   | 7     | 1 2 3 |
| 2     | 9     | 3   | 1 | 2 | 4   | 1   | 1 2   | 8     |
| 5     |       |     | 5 | 5 |     | 7   | 6     |       |
| 1 2 3 | 1 2 3 | 5   | 4 | 3 | 7   | 3   | 2 3   | 2 3   |
| 8     | 8     |     | 9 | 9 |     | 6   | 4     | 9     |
| 2 3   | 6     | 2   | 4 | 3 | 1   | 5   | 3     | 7     |
| 8     |       | 8 9 | 5 | 9 | 8   | 8 9 | 8 9   |       |
| 4     | 7     | 2   | 6 | 3 | 2   | 1   | 1 2 3 | 1 2 3 |
|       |       | 8 9 | 5 | 9 | 8   | 5   | 5     | 9     |

|   |   |   |   |       |     |       |       |       |
|---|---|---|---|-------|-----|-------|-------|-------|
| 1 | 4 | 6 | 3 | 2 3   | 3   | 2     | 4     | 3     |
|   |   | 9 | 8 | 4 5   | 4 5 | 4 5   | 4 5 6 | 4 5 6 |
| 3 | 7 | 2 |   | 8 9   | 8   | 8     | 7     | 9     |
| 8 |   |   |   | 3     | 6   | 4     | 3     | 3     |
| 3 | 6 | 5 | 1 | 4     | 4   | 4     | 4     | 9     |
| 6 | 4 | 9 |   | 7     | 7   | 6     | 8     | 2     |
| 2 | 8 |   | 6 | 2     | 4   | 1     | 3     |       |
| 6 |   | 9 | 7 | 4 5 6 | 4 5 | 2     | 4 5 6 | 4 5 6 |
| 4 | 5 | 1 |   | 2 3   | 3   | 2     | 2     | 6     |
|   |   |   |   | 6     | 7 8 | 6     | 9     | 7     |
| 2 | 3 | 7 |   | 7 8   | 7 8 | 2     | 6     | 6     |
| 6 |   |   |   | 8     | 8   | 4 5 6 | 4 5 6 | 4 5 6 |
| 7 | 1 |   | 6 | 4 5 6 | 2   | 3     | 8     | 4 5 6 |
|   | 9 |   | 9 | 9     |     |       | 1     | 4 5 6 |
| 5 | 1 | 6 | 4 |       | 9   | 2     | 2 3   | 1     |
|   |   |   |   | 7 8   | 7 8 | 6     | 6     | 3     |
| 3 | 2 | 3 |   | 4 5 6 | 1   | 4 5 6 | 7     | 9     |
| 8 |   | 8 |   |       |     |       | 4 5 6 |       |

|       |       |     |     |     |       |       |   |     |
|-------|-------|-----|-----|-----|-------|-------|---|-----|
| 1     | 2 3   | 3   | 4 5 | 7   | 2     | 2 3   | 3 | 8   |
|       | 6     | 6   |     | 5   | 9     | 4 5   | 4 | 6   |
| 2 3   | 4     | 3   |     | 2   | 2     | 1 2 3 | 3 | 1   |
| 8 9   |       | 7 8 |     | 8   | 8 9   | 5     | 7 | 5   |
| 2 3   | 2 3   | 5   | 4   | 1   | 2     | 2 3   | 3 | 3   |
| 6     | 6     |     | 8   | 4   | 8     | 4     | 6 | 4   |
| 8 9   | 7 8 9 |     |     | 7   |       | 7     | 9 | 9   |
| 2     | 1 2   | 6   | 1   | 3   | 2     | 9     | 5 | 4   |
| 4     | 8     | 7 8 | 7 8 | 7 8 | 7 8   |       | 7 | 6   |
| 3     | 1     | 3   | 1   | 1   | 5 6   | 5 6   | 3 | 8   |
| 4 5 6 | 7     | 6   | 7   | 5   | 7     | 4     |   | 2   |
| 2 3   | 2 3   | 3   | 9   | 2   | 3     | 1     | 3 |     |
| 5 6   | 6     | 6   |     | 5 6 | 8     | 7     | 7 | 6   |
| 8     | 7 8   | 7 8 |     |     |       |       |   |     |
| 4     | 3     | 3   | 1   | 4 5 | 9     | 6     | 2 | 4 5 |
| 8     | 8     |     | 7 8 | 7 8 | 7 8   |       | 7 | 3   |
| 3     | 6     | 5   | 2   | 1   | 4     | 8     | 3 | 1   |
| 4     | 9     |     | 7   | 6   | 7     | 4     | 9 | 3   |
| 7     | 6     | 4   | 6   | 1   | 4 5 6 | 3     | 1 | 4 5 |
|       | 8     | 8   |     | 8   | 8     | 4     | 9 | 9   |

|       |       |     |     |       |     |     |     |     |
|-------|-------|-----|-----|-------|-----|-----|-----|-----|
| 2 3   | 2 3   | 5   | 7   | 1 2 3 | 1   | 9   | 1   | 3   |
| 6     | 4     |     |     | 6     | 4   |     | 8   | 6   |
| 8     |       |     |     | 5     | 5   | 1   | 1   | 3   |
| 2 3   | 2 3   | 2   | 8   | 1 2 3 | 1   | 5 6 | 5   | 4   |
| 7     | 7     | 7   | 9   | 9     | 9   | 7   | 7   |     |
| 3     | 1     | 4   | 6   | 3     | 3   | 5 6 | 2   | 3   |
| 6     |       | 7   | 9   | 6     | 9   | 8   | 7 8 |     |
| 4     |       | 1   |     | 6     | 5 6 | 1   | 3   | 1   |
|       | 7 8 9 | 7   | 9   | 9     | 7   | 8   | 5   | 8 9 |
| 2     | 6     | 3   | 1   | 8     | 5   | 2   | 1   | 5   |
| 7     |       |     | 7   | 9     | 4 5 | 4 5 | 9   | 5   |
| 1 2   | 2     | 1 2 | 4   | 5     | 3   | 7   | 6   | 1 2 |
| 5     |       | 9   |     | 9     |     | 5   | 8 9 |     |
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|       | 4     | 6   | 7   | 7     |     | 4   | 6   | 6   |
| 1 2   | 2     | 8   | 5   | 4     | 1   | 3   | 1   | 1 2 |
| 7     | 7     |     | 7   | 9     | 7   | 9   | 7   | 9   |
| 1 2 3 | 2 3   | 1 2 | 2   | 1     |     | 6   | 1 2 | 1 2 |
| 7     | 4     | 4   |     | 9     | 7   | 9   | 7   | 9   |

|       |     |     |       |       |     |       |         |     |     |
|-------|-----|-----|-------|-------|-----|-------|---------|-----|-----|
| 1     | 3   | 1 2 | 1 2 3 | 5 6   | 7   | 4     | 2 3     | 3   | 3   |
| 8 9   |     | 5   | 5     | 8     |     |       | 5 6     | 5 6 | 8 9 |
| 4     | 3   | 6   | 4 5   | 2     | 9   | 1     | 4 5     | 3   | 3   |
| 8     |     |     |       |       |     |       | 7       | 5   | 4   |
| 4     | 2   | 7   | 3     | 5 6   | 5 6 | 4 5 6 | 2       | 5 6 | 1   |
| 8 9   | 4 5 | 8   |       | 8     |     |       | 4 5 6   | 9   |     |
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| 4     | 4   | 6   |       | 8     |     | 8     |         | 6   | 9   |
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| 7     | 7   |     | 8     | 9     | 9   | 9     |         |     |     |
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| 7     |     |     |       | 7     |     |       | 4 7     | 6   |     |
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| 7     | 9   | 7   | 9     | 7     | 9   |       | 7       | 7   |     |
| 4     | 6   | 4 5 | 4 5   | 5 6   | 1   | 4 5 6 | 3       | 2   | 3   |
| 7 8 9 | 7 8 | 9   |       | 9     |     |       | 4 5 6   | 4 7 | 6   |

|     |   |     |     |     |     |       |       |       |     |
|-----|---|-----|-----|-----|-----|-------|-------|-------|-----|
| 8   | 2 | 1 5 | 3   | 4   | 6   | 3     | 1     | 1     | 3   |
|     |   | 9   | 5 6 |     |     | 6     | 4     | 6     | 7   |
| 5 6 | 5 | 4   | 3   | 1   | 2   | 2     | 2 3   | 2 3   |     |
| 7   | 9 |     | 7 8 |     | 8   | 6     | 9     | 8     | 8 9 |
| 7   | 6 | 3   | 1   | 2   | 6   | 4     | 6     | 5     | 1 2 |
|     |   | 7   | 7 8 | 8   |     |       | 4     | 6     | 8   |
| 5   | 4 | 5   | 6   | 2   | 1 2 | 3     | 9     | 1 2   |     |
| 7   | 7 |     | 8   | 8   | 8   |       |       | 8     |     |
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| 9   |   | 9   |     |     | 7 8 | 7     | 6     | 7 8   | 8   |
| 2   | 6 | 8   | 9   | 3   | 1   | 4 5   | 1     |       | 4 5 |
|     |   | 7   |     |     | 7   |       | 7     |       |     |
| 3   | 7 | 2 3 | 1 3 |     | 1 2 | 1 2 3 | 1 2 3 |       | 6   |
| 5   | 9 | 5   | 8   | 8 9 | 4   | 9     |       |       |     |
| 4   | 8 | 2 3 | 1 3 | 6   | 5   | 1 2   | 1 2 3 | 1 2 3 |     |
|     |   | 6   |     | 6   |     | 7     | 9     | 7     | 9   |
| 1   | 5 | 3   | 2   | 7   | 3   | 8     | 4     | 5     | 3   |
|     | 9 | 5 6 | 9   |     | 6   |       |       | 9     |     |

|     |   |       |         |         |       |       |     |       |     |
|-----|---|-------|---------|---------|-------|-------|-----|-------|-----|
| 4 5 | 6 |       | 1 4 5   | 2       | 1 5   | 1     | 1   | 3     |     |
|     |   | 7 8 9 | 7       | 9       | 7 8 9 | 8 9   | 7 8 |       |     |
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|     | 7 | 9     | 7 8 9   | 7       | 9     | 8 9   | 7 8 | 7 8 9 |     |
| 1   | 2 | 3     | 6       | 6       | 6     | 4     | 2   | 5     |     |
|     | 7 | 9     | 7       | 9       | 7 8 9 | 7 8   |     |       |     |
| 3   | 5 | 4     | 6       | 8       | 1 5 6 | 7     | 1 3 | 2     |     |
|     | 9 |       |         | 9       | 9     |       | 4   | 6     |     |
| 2 3 | 1 | 2     | 6       | 5 6     | 5 6   | 4     | 3   | 6     | 6   |
| 6   | 7 | 9     | 7       | 9       | 9     | 8     | 8   |       |     |
| 8   | 5 | 4     | 6       | 2       | 3     | 1 5 6 | 5 6 | 9     | 4 6 |
|     | 7 |       |         | 7       |       |       |     |       |     |
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|     |   | 7     | 9       | 7       | 9     | 8 9   |     | 7 8 9 |     |
| 7   | 8 | 5 6   | 4 5 6   | 4 5 6   | 2     | 3     | 4   | 1     |     |
|     |   | 9     | 9       | 9       |       | 9     | 6   |       |     |
| 9   | 3 | 1 5 6 | 1 4 5 6 | 8       | 1 5 6 | 2     | 4   | 6     | 4 6 |
|     |   | 7     | 7       |         | 7     | 4 7   | 6 7 |       |     |

|     |       |     |     |       |     |       |       |     |     |
|-----|-------|-----|-----|-------|-----|-------|-------|-----|-----|
| 3   | 2     | 2   | 3   | 4 5 6 | 4   | 3     | 2     | 2   | 1   |
| 7   | 5 6   | 8 9 | 8 9 | 7 8   | 7 8 |       | 4     | 6   | 4 5 |
| 3   | 1     | 3   | 1   | 3     | 2   | 4 5 6 | 9     | 4   | 8   |
| 5 6 |       | 6   |     | 6     | 7   |       |       | 6   | 5 6 |
| 3   | 4     | 2   | 3   | 1     | 5 6 | 1 3   | 2     | 7   | 2 3 |
| 5 6 |       | 8 9 | 5   | 8     |     | 8     | 6     |     | 5 6 |
| 8   | 1 5 6 | 4   | 6   | 4 5   | 9   | 4     | 2     | 3   |     |
|     | 7     |     |     | 7     |     | 7     |       | 5   |     |
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|     | 7     |     |     | 7 8   |     | 7 8   | 7     |     |     |
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|     | 7     |     |     | 7     |     |       |       | 9   | 8 9 |
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| 1   | 2     | 2   | 6   | 4     | 4   | 2     | 5     | 3   | 2   |
|     | 8 9   | 8 9 | 7   | 9     | 7   |       |       | 4   | 6   |
| 3   | 7     | 5   | 4   | 3     | 1 2 | 1 3   | 2     | 1 2 | 2   |
| 4   | 6     |     | 9   | 4     | 4   |       | 4     | 8 9 | 6   |

|     |     |     |       |       |       |       |       |     |       |
|-----|-----|-----|-------|-------|-------|-------|-------|-----|-------|
| 1   | 5   | 2   | 3     | 6     | 8     | 6     | 4     | 4   |       |
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| 8 9 |     | 6   | 9     | 9     |       | 8     |       |     |       |
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| 8 9 | 8 9 |     |       |       | 5 6   | 9     | 5 6   |     |       |
| 2   | 2   | 8   | 7     | 1 2 3 | 1 2 3 | 5 6   | 3     | 2   | 5 6   |
| 4 5 | 4   | 6   |       | 5 6   | 4 5 6 | 4 5 6 | 4 5 6 |     |       |
| 2   | 2   | 9   | 2 3   | 5 6   | 4 5 6 | 1     | 4 5 6 | 8   |       |
| 4 5 | 4   | 6   | 7     | 5 6   |       |       |       |     |       |
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| 4 5 |     | 5 6 | 4 5 6 |       |       |       |       |     |       |
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| 4 5 | 4   | 9   | 4 5 6 | 5 6   | 9     | 7     | 5 6   | 5 6 |       |
| 2 3 | 2 3 | 1   | 1 2   | 1 2   | 1     | 5 6   | 1     | 5 6 |       |
| 4 5 | 4   | 8 9 | 4 5 6 | 5 6   | 9     | 7     | 7     | 9   |       |
| 6   |     | 1   | 1     | 5     | 7     | 4     | 2     | 3   |       |
|     | 8 9 | 5   | 8     | 9     |       |       |       |     |       |

|     |       |       |       |     |       |       |     |     |     |
|-----|-------|-------|-------|-----|-------|-------|-----|-----|-----|
| 1   | 3     | 9     | 1     | 3   | 4 5   | 5 6   | 8   | 1   | 3   |
| 4 5 |       | 7     | 5     |     | 7     |       |     | 6   | 2   |
| 7   |       |       |       |     |       |       |     |     | 5 6 |
| 8   | 1     | 3     | 1     | 3   | 2     | 3     | 3   | 1   | 3   |
| 7   | 6     | 7     | 5     |     | 7     | 9     | 6   | 4   | 6   |
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|     |       | 8     |       |     | 9     |       |     | 4   |     |
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|     | 7     |       | 9     | 7   | 9     |       | 9   |     |     |
| 9   | 1     | 3     | 1     | 3   | 3     | 2 3   | 2 3 | 1 2 | 1 2 |
|     | 4     | 7 8   | 7 8   | 7   | 7     | 6     | 6   | 4   | 6   |
| 2   | 1     | 6     | 8     | 5   | 5     | 9     | 1   | 4   | 3   |
|     | 4     |       |       | 9   |       |       |     | 7   |     |
| 3   | 3     | 5     | 3     | 2 3 | 1     | 4     | 2   | 6   | 9   |
| 7   | 7 8   | 7 8   | 7 8   | 7   | 7     | 8     | 7   | 6   |     |

|          |            |   |        |          |          |        |            |        |          |            |            |          |            |
|----------|------------|---|--------|----------|----------|--------|------------|--------|----------|------------|------------|----------|------------|
| 1<br>8   | 3          | 2 | 1<br>8 | 3        | 4        | 5      | 6          | 1<br>7 | 3        | 1<br>7 8   | 9          |          |            |
| 1<br>4   | 3          |   | 3      |          | 1<br>7 8 | 2      | 1<br>7 8 9 | 3      | 1<br>4 5 | 2<br>4 5   | 1<br>5     | 3        |            |
| 7        | 4<br>8     | 5 | 3      | 9        | 1<br>8   | 3      | 2          | 1<br>8 | 3        | 1<br>4 5 6 | 2<br>4 5 6 | 1<br>5 6 | 3          |
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| 6        | 4<br>7     |   | 1<br>4 | 7        | 9        | 3      | 8          | 1<br>7 | 5        | 1<br>7     | 5          | 2        |            |
| 1<br>8 9 | 3          |   | 3      |          | 5        |        |            | 2      | 1<br>3   | 1          |            | 4        |            |
|          | 3          | 6 | 4<br>7 | 3        | 2        | 4<br>7 | 9          | 7      | 5        | 9          | 8          | 1<br>7   | 5          |
| 5        | 4<br>7 8 9 |   | 2      |          | 1<br>7 8 | 6      | 4<br>7 8 9 | 6      | 7        | 9          | 1<br>7     | 4        | 5          |
| 4        | 3          | 1 |        | 3        |          | 3      | 4<br>7 8 9 | 6      | 5        | 3          | 2          | 4<br>5 6 | 2<br>4 5 6 |
|          | 8 9        |   | 1      | 4<br>7 8 | 7 8      | 6      | 4<br>7 8 9 | 7      | 9        | 7          | 2          | 4<br>5 6 | 7          |

|       |       |        |     |       |        |     |        |     |       |     |     |       |        |        |        |     |
|-------|-------|--------|-----|-------|--------|-----|--------|-----|-------|-----|-----|-------|--------|--------|--------|-----|
| 7 8 9 | 7     | 5 6    | 3   | 2     | 1<br>8 | 5 6 | 1<br>7 | 3   | 5 6   | 3   | 7 8 | 6     | 1<br>4 | 3      | 1<br>4 | 3   |
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| 7 8   | 4     | 5      | 7 8 | 3     | 1<br>8 | 2   | 1 2 3  | 5 6 | 2 3   | 5 6 | 7 8 | 6     | 9      | 1<br>8 | 3      | 5   |
| 2     | 8     | 7      | 9   | 3     | 5 6    | 5 6 | 1      | 4   | 2 3   | 2 3 | 9   | 2 3   | 2 3    | 9      | 2 3    | 9   |
| 4     | 2     | 1 2    | 9   | 6     | 3      | 4   | 2      | 4   | 2     | 8 9 | 5   | 1 2   | 8      | 7      | 1 2    | 3   |
| 5     | 1 2 3 | 1<br>9 | 3   | 2     | 2      | 4   | 2      | 4   | 7 8 9 | 8 9 | 6   | 1 2 3 | 8 9    | 6      | 1 2 3  | 8 9 |
| 6     | 1 2   | 5      | 4 5 | 7     | 9      | 1   | 2      | 5   | 8     | 4 5 | 3   | 4     | 7      | 4      | 9      | 2   |
| 4     | 2     | 5      | 4 5 | 8 9   | 7      | 9   | 2 3    | 4 5 | 2 3   | 4 5 | 1   | 4     | 8      | 6      | 2      | 6   |
| 3     | 1 2   | 1      | 4   | 7 8 9 | 1 2    | 6   | 4      | 6   | 4     | 2   | 5   | 4     | 8 9    | 5      | 2      | 8 9 |

|       |          |       |     |       |       |     |     |        |   |   |       |     |   |     |     |       |
|-------|----------|-------|-----|-------|-------|-----|-----|--------|---|---|-------|-----|---|-----|-----|-------|
| 7     | 2<br>8 9 | 1 2   | 8   | 3     | 1 2   | 9   | 6   | 2<br>8 | 5 | 4 | 1 2 3 | 2 3 | 6 | 5   | 4   | 7     |
| 1 2 3 | 2 3      | 6     | 9   | 8 9   | 5     | 4   | 1 2 | 1 2    | 2 | 1 | 8     | 6   | 9 | 7   | 1 2 | 3     |
| 1 2   | 9        | 4     | 1 2 | 6     | 7 8 9 | 7   | 9   | 7 8 9  | 8 | 3 | 1     | 9   | 7 | 8   | 3   | 9     |
| 6     | 2 3      | 2 3   | 7 8 | 1     | 1 2 3 | 4   | 5   | 7 9    | 7 | 9 | 5     | 4   | 7 | 8 9 | 8 9 | 5     |
| 3     | 9        | 1     | 4   | 7 8 9 | 6     | 7   | 9   | 7 8 9  | 7 | 3 | 2     | 5   | 7 | 8 9 | 8 9 | 1     |
| 2 3   | 2 3      | 2 3   | 5   | 9     | 8 9   | 7 8 | 7   | 9      | 7 | 9 | 2     | 1   | 4 | 6   | 8   | 6     |
| 1 2 3 | 2 3      | 1 2 3 | 4 5 | 5 6   | 1 2 3 | 6   | 1   | 5 6    | 8 | 4 | 7     | 9   | 1 | 4   | 6   | 1 2 6 |
| 8     | 7        | 9     | 2   | 1     | 4     | 6   | 4   | 5      | 6 | 3 | 4     | 7   | 8 | 9   | 7   | 9     |
| 1 2   | 4 5      | 2     | 5 6 | 1 2   | 6     | 7   | 9   | 7      | 9 | 2 | 5     | 6   | 4 | 5 6 | 3   | 4     |

|        |     |   |        |        |        |        |        |   |        |        |        |       |        |       |        |   |
|--------|-----|---|--------|--------|--------|--------|--------|---|--------|--------|--------|-------|--------|-------|--------|---|
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| 1 2    | 1   | 1 | 7 8    | 7      | 9      | 7 8    | 3      | 6 | 1<br>7 | 3      | 5      | 4     | 8 9    | 7 8 9 | 1      | 2 |
| 1 2 3  | 5   | 4 | 8      | 1 2    | 1 2    | 1      | 7      | 1 | 3      | 6      | 5      | 4     | 8 9    | 7 8 9 | 1      | 2 |
| 6      | 1   | 3 | 1      | 3      | 5      | 1 2    | 4      | 1 | 4      | 7 8 9  | 1      | 3     | 1      | 3     | 2 3    | 9 |

|        |        |        |          |        |     |            |       |     |        |       |        |        |     |
|--------|--------|--------|----------|--------|-----|------------|-------|-----|--------|-------|--------|--------|-----|
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| 7      | 1<br>8 | 2      | 5 6      | 4      | 1   | 5 6        | 8 9   | 1   | 5 6    | 5 6   | 3      | 5 6    | 3   |

|     |   |     |       |     |          |   |     |       |     |       |     |        |        |
|-----|---|-----|-------|-----|----------|---|-----|-------|-----|-------|-----|--------|--------|
| 2 3 | 1 | 3   | 2 3   | 4   | 1<br>8 9 | 7 | 5   | 1 2   | 5   | 6     | 3   | 4      | 1<br>9 |
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| 2   | 5 | 8   | 7 8   | 7 8 | 9        | 1 | 4   | 6     | 1 2 | 4 5 6 | 5 6 | 3      | 8 9    |
| 2 3 | 5 | 6   | 1     | 2   | 4        | 3 | 2 3 | 4     | 4 5 | 5     | 9   | 7      | 8 9    |

|             |                  |             |                  |             |                  |                  |                            |                            |
|-------------|------------------|-------------|------------------|-------------|------------------|------------------|----------------------------|----------------------------|
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|                  |                            |                       |                       |             |             |                  |                  |                            |
|------------------|----------------------------|-----------------------|-----------------------|-------------|-------------|------------------|------------------|----------------------------|
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|             |   |             |                       |                       |                            |                       |                            |                  |
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|                  |                  |             |                  |                       |                  |                       |                  |                       |             |
|------------------|------------------|-------------|------------------|-----------------------|------------------|-----------------------|------------------|-----------------------|-------------|
| 4<br>7           | 5<br>7           | 4<br>5<br>9 | 1                | 2                     | 3                | 6<br>8<br>9           | 4<br>5<br>7<br>8 | 4<br>5<br>6<br>7<br>8 | 5<br>7<br>8 |
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|   |   |   |                  |                  |                            |                            |             |                  |
|---|---|---|------------------|------------------|----------------------------|----------------------------|-------------|------------------|
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|        |             |                  |             |        |             |                       |             |                       |
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|               |                 |               |               |             |                   |               |                        |
|---------------|-----------------|---------------|---------------|-------------|-------------------|---------------|------------------------|
| 2<br>4 5<br>9 | 2<br>5 6<br>9   | 3             | 5 6<br>9      | 1 8         | 2<br>5            | 7             | 4 5<br>9               |
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|             |               |            |                 |                 |             |                   |             |             |
|-------------|---------------|------------|-----------------|-----------------|-------------|-------------------|-------------|-------------|
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|             |               |                 |             |                 |                 |                 |                   |             |             |
|-------------|---------------|-----------------|-------------|-----------------|-----------------|-----------------|-------------------|-------------|-------------|
| 9           | 3<br>5 6<br>7 | 1<br>4<br>7     | 3<br>6<br>8 | 1 2<br>4 5<br>7 | 1 2<br>4 5<br>7 | 8               | 3<br>5 6<br>7     | 1<br>4<br>7 | 3<br>6<br>4 |
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|            |               |                 |          |            |              |          |          |          |
|------------|---------------|-----------------|----------|------------|--------------|----------|----------|----------|
| 1<br>7     | 3             | 2               | 1<br>7 9 | 4<br>6     | 1<br>7 9     | 4<br>8   | 6<br>8   | 5        |
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| 9          | 6             | 4               | 2        | 8          | 5            | 3        | 7        | 1        |
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| 1 3<br>6   | 1<br>7 8      | 1<br>7 8        | 3<br>6   | 2 3<br>7 9 | 4            | 5        | 1<br>9   | 2 3      |
| 1 3<br>7   | 9             | 5               | 1<br>7 8 | 2 3<br>7   | 1 2 3<br>7 8 | 2<br>4   | 6        | 2 3<br>4 |

|                 |                 |               |               |                 |          |                 |               |          |
|-----------------|-----------------|---------------|---------------|-----------------|----------|-----------------|---------------|----------|
| 2<br>7 8 9      | 5<br>7 8        | 6             | 1<br>8        | 1 2<br>5<br>9   | 4        | 3               | 1<br>5<br>8 9 | 1 2<br>9 |
| 2<br>4<br>8 9   | 4 5<br>8        | 2<br>8 9      | 3             | 1 2<br>5 6<br>9 | 2<br>8 9 | 7               | 1 2<br>6<br>9 | 9        |
| 2<br>8 9        | 1               | 3             | 6<br>8        | 2<br>5 6<br>9   | 7        | 5 6<br>8 9      | 4<br>2<br>6   | 9        |
| 1<br>4<br>7 8   | 4<br>7 8        | 1<br>8        | 9             | 1 2 3<br>4<br>6 | 2 3<br>8 | 4<br>7          | 2 3<br>6      | 5        |
| 3               | 6               | 4 5<br>9      | 2<br>4 5<br>7 | 2<br>4 5<br>7   | 2<br>5   | 1               | 2<br>9        | 8        |
| 1<br>4<br>7 8 9 | 2<br>4 5<br>8 9 | 1<br>6<br>8 9 | 1<br>8        | 1 3<br>4 5 6    | 3<br>5   | 4<br>7          | 3<br>6<br>9   | 3        |
| 1 2             | 9               | 1 2           | 4 5<br>7      | 8               | 6        | 4 5<br>7        | 5<br>4<br>7   | 3        |
| 6               | 4<br>8          | 3<br>7        | 2<br>4 5      | 2 3<br>4 5      | 2 3<br>5 | 1<br>4 5<br>8 9 | 1<br>8 9      | 9        |
| 5               | 4<br>8          | 3<br>4        | 4<br>7        | 4<br>7          | 3<br>9   | 1               | 6<br>8 9      | 6        |

|            |            |          |          |          |            |            |               |            |               |
|------------|------------|----------|----------|----------|------------|------------|---------------|------------|---------------|
| 1 2 3<br>5 | 1 2<br>4 5 | 4        | 3        | 1 2<br>4 | 2<br>6     | 9          | 3<br>4 5<br>7 | 8          | 1 3<br>4<br>6 |
| 8          | 1<br>4 5   | 4        | 3        | 6<br>7   | 1<br>4     | 6          | 4 5<br>7 9    | 5 6<br>7   | 2             |
| 1 2 3<br>9 | 6          | 7        | 5        | 2<br>8   | 1 2<br>4   | 4          | 3<br>4        | 1 3<br>4   | 3             |
| 1<br>5     | 1<br>5     | 2        | 7        | 3<br>8 9 | 3<br>8     | 6          | 4<br>8 9      | 3<br>4     | 3             |
| 6<br>7 9   | 3          | 6<br>8 9 | 4        | 5        | 2<br>7 8 9 | 1          | 7 8 9         | 7 8 9      | 9             |
| 6<br>7 9   | 4          | 6<br>8 9 | 1        | 2 3<br>8 | 2 3<br>6   | 5          | 7 8 9         | 7          | 5             |
| 2 3<br>6   | 2<br>7 8   | 1        | 4        | 2 3<br>8 | 2 3<br>6   | 9          | 4<br>8        | 3<br>6     | 3             |
| 2 3<br>6   | 2<br>8     | 5        | 4        | 2<br>8 9 | 2 3<br>6   | 7          | 1             | 2<br>6     | 3<br>6        |
| 4          | 9          | 3<br>8   | 1 2<br>8 | 2 3<br>6 | 1 2 3<br>8 | 2 3<br>5 6 | 2 3<br>7      | 2 3<br>5 6 | 3<br>6        |

|            |            |          |            |                  |                |                |              |              |
|------------|------------|----------|------------|------------------|----------------|----------------|--------------|--------------|
| 1          | 4 5<br>8   | 2<br>8   | 6          | 7                | 4 2<br>8       | 3              | 9            | 5<br>8       |
| 2 5 6<br>8 | 5 6<br>8   | 7        | 2 3<br>8   | 9                | 2 3<br>8       | 4              | 5 6<br>8     | 1            |
| 9          | 4 6<br>8   | 3        | 1 4<br>8   | 5                | 1 4<br>8       | 2              | 7            | 6<br>8       |
| 2 6<br>8   | 6<br>7 8   | 1        | 5          | 2 3 6 4 2 3<br>8 | 6 4 6<br>8     | 9              |              |              |
| 3          | 5 6<br>7 8 | 4        | 1 8        | 1 6<br>8         | 9              | 1 5 6<br>7 8   | 5 6<br>8     | 2            |
| 2 5 6<br>8 | 9          | 2 6<br>8 | 1 2 4<br>8 | 1 2 6<br>8       | 7              | 1 5 6<br>8     | 3            | 4 5 6<br>8   |
| 4 6<br>8   | 1 3        | 5        | 1 7 8      | 3 8              | 1 3 6<br>8     | 9              | 2            | 4 6<br>7 8   |
| 4 6<br>8   | 1 3        | 9        | 1 2 3 7 8  | 1 2 3 6 8        | 1 2 3 5 6<br>8 | 5 6 4 5 6<br>8 | 4 5 6<br>7 8 | 4 5 6<br>8 9 |
| 7          | 2          | 6<br>8   | 9          | 4                | 5 6<br>8       | 5 6<br>8       | 1            | 3            |

|              |              |              |              |                |              |         |                    |
|--------------|--------------|--------------|--------------|----------------|--------------|---------|--------------------|
| 1 4 5 3<br>7 | 6            | 2            | 1 5 3<br>7 8 | 3 1 5 3<br>7   | 9            | 4 7 8   | 4 5<br>8           |
| 9            | 4 5          | 4 5<br>7     | 2 3 5<br>7 8 | 2 3<br>7 8     | 6            | 4 5 7 8 | 2 4 5<br>8         |
| 8            | 1 5          | 5<br>7       | 4            | 2 7 9          | 1 2 5<br>7 9 | 6       | 3 2 5              |
| 1 2 4<br>7   | 1 4<br>8 9   | 4 7 8 9      | 1 2 3 7      | 6 1 2 3<br>7 9 | 4 8          | 5       | 4 8 9              |
| 1 4 5<br>7   | 3            | 4 5 6<br>7 9 | 1 5<br>7     | 4 7 9          | 8            | 2       | 1 4 6 4<br>9 9     |
| 1 2 4 5      | 1 4 5<br>8 9 | 4 5 6<br>8 9 | 1 2 5<br>5   | 2 4 9          | 1 2 5<br>9   | 3       | 1 4 6 8<br>9       |
| 4 5 3        | 2            | 4 5 8        | 9            | 3 7 8          | 3 7          | 1       | 4 6 4 5 6<br>7 8 8 |
| 6            | 4 8 9        | 1            | 2 3 7 8      | 5 7            | 2 3          | 4 7 8   | 4 8 9 3            |
| 5 3          | 7            | 5 3<br>8 9   | 6            | 1              | 4            | 5 8     | 2 2 3<br>5 8 9     |

|                               |                               |                             |  |   |  |  |  |  |
|-------------------------------|-------------------------------|-----------------------------|--|---|--|--|--|--|
| <div>5</div> <div>7 8 9</div> | <div>4</div> <div>7 8 9</div> | <div>2</div> <div>4</div>   | <div>6</div>                           | <div>1</div> <div>5</div> <div>7 9</div>            | <div>1</div> <div>5</div> <div>8 9</div> | <div>2</div> <div>4 5</div> <div>7 8</div> | <div>2 3</div> <div>4 5</div>          | <div>2 3</div> <div>5</div> <div>8</div> |
| <div>6</div>                  | <div>4</div> <div>7 8</div>   | <div>2</div> <div>1</div>   | <div>3</div> <div>5</div> <div>7</div> | <div>5</div> <div>8</div>                           | <div>9</div>                             | <div>2</div> <div>4 5</div>                | <div>2</div> <div>5</div> <div>8</div> |  |
| <div>3</div>                  | <div>7 8 9</div>              | <div>5</div> <div>7 8</div> | <div>2</div>                           | <div>4</div>  | <div>5</div> <div>8 9</div>              | <div>5</div> <div>7 8</div>                | <div>1</div>                           | <div>6</div>                             |
| <div>7 8</div>                | <div>5</div>                  | <div>7 8</div>              | <div>1</div> <div>4</div>              | <div>1</div> <div>3</div>                           | <div>6</div>                             | <div>1 2</div> <div>4</div>                | <div>2 3</div> <div>4</div>            | <div>1 2 3</div> <div>9</div>            |
| <div>1</div> <div>4</div>     | <div>2 3</div>                | <div>9</div>                | <div>7</div>                           | <div>8</div>  | <div>1 2</div> <div>5</div>              | <div>1</div> <div>4 5</div>                | <div>6</div>                           | <div>1</div> <div>5</div> <div>3</div>   |
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| <div>8 9</div>                | <div>4</div>                  | <div>3</div> <div>4</div>   | <div>5</div>                           | <div>6</div>  | <div>7</div>                             | <div>1 2</div> <div>8</div>                | <div>2</div> <div>9</div>              | <div>1 2</div> <div>8 9</div>            |
| <div>2</div>                  | <div>1</div> <div>7 8 9</div> | <div>6</div>                | <div>1</div> <div>8 9</div>            | <div>1</div> <div>9</div>                           | <div>4</div>                             | <div>3</div>                               | <div>5</div> <div>7 9</div>            | <div>5</div> <div>8 9</div>              |
| <div>5</div> <div>7 8 9</div> | <div>1</div> <div>7 8 9</div> | <div>5</div> <div>7 8</div> | <div>1</div> <div>8 9</div>            | <div>2</div>  | <div>3</div>                             | <div>6</div>                               | <div>7</div> <div>9</div>              | <div>4</div>                             |

|                           |                            |                    |                        |                    |
|---------------------------|----------------------------|--------------------|------------------------|--------------------|
| 2 3 1 3 1<br>9 8 9 8 9    | 5                          | 1 2 3 2<br>7 7 8 9 | 1 3 1 4<br>8 9 8 9     | 6                  |
| 2 3 1 3<br>9 5 8 9        | 4<br>8                     | 1 3 6<br>8         | 2 1 3 1<br>5 8 9 5 8 9 | 7                  |
| 3 6 7<br>9                | 1 5 6<br>8 9               | 4 1 3<br>8 9       | 2 1 5<br>8 9           | 1 3<br>8 9         |
| 1 2 3                     | 6 8 4 5<br>7 9             | 4 5 7<br>9         | 4 5 7<br>9             | 4<br>9             |
| 5 4<br>8                  | 7 2 9 1 6 3 4<br>8         |                    |                        |                    |
| 4 6 4 6<br>8 9            | 7 4 5 3<br>8               | 1 4 5<br>8         | 1 4 5<br>8             | 2                  |
| 3 1 3 4 6<br>4 6 4 6<br>7 | 2 9 1 3 4 7 8<br>7         | 1 3 1 4 7 8<br>7 8 | 1 4 7 8<br>7 8         | 5                  |
| 4 3 1 3 4 5 9<br>7 9      | 1 5 9 8 1 2 3 4 5 7<br>8 7 | 2 4 7 8<br>7 8     | 1 3 4 7 8 9<br>7 8 9   | 6 1 3 4 8 9<br>8 9 |
| 8 1 3 1 4 5 9<br>9        | 1 3 1 3 4 5 7<br>7         | 6 1 3 4 7 9<br>7 9 | 2 1 3 4<br>4           | 9                  |

|                        |                            |                    |                      |                  |              |              |       |     |   |     |
|------------------------|----------------------------|--------------------|----------------------|------------------|--------------|--------------|-------|-----|---|-----|
| 3 1 2 1 2<br>8 7 9 7 9 | 2 3 2 3 3<br>4 6 4 6 4 7 8 | 4 5 5 6 4<br>7 9   | 4                    | 8                | 2 3 2 3<br>6 | 1            | 9     | 5 7 | 8 | 2 3 |
| 4                      | 2 5 6<br>7                 | 2 7                | 2 3 6                | 1                | 9            | 5 7          | 8     | 2 3 |   |     |
| 3 8                    | 2 6<br>7 9                 | 2 7 9              | 2 3 4 6 4 6<br>7 8   | 5                | 4 7 9        | 3 6          | 1     |     |   |     |
| 6                      | 3                          | 4 2<br>7 9         | 8                    | 2 4 5 1<br>7 9 7 | 4 5 9        | 1 5          | 4     | 9   |   |     |
| 1                      | 4 2<br>9                   | 5                  | 4 2 3 2 3<br>9       | 4 3              | 6 8          | 7            | 6     |     |   |     |
| 7 9                    | 4 7 9                      | 8                  | 1 4 5 4 5 9<br>7 9   | 6                | 2            | 1 3 5 4<br>9 | 3     |     |   |     |
| 5 7 9                  | 1 4 4<br>7 9 7 9           | 1 5 6 5 6<br>9 8 9 | 8                    | 3                | 2            | 5 6 7 8      |       |     |   |     |
| 5 7                    | 8                          | 3                  | 1 4 5 6 4 5 6<br>8 9 | 2                | 1 6          | 9            | 5 6 7 |     |   |     |
| 2                      | 1 9                        | 6                  | 7                    | 5 3 1 3<br>8 9 8 | 1 8          | 4            | 5 8   |     |   |     |

|         |           |           |                  |                  |             |                      |              |
|---------|-----------|-----------|------------------|------------------|-------------|----------------------|--------------|
| 4       | 8         | 3 6       | 7                | 1 3 1 3<br>6 5 6 | 2           | 5 3 5<br>6 9         | 3 5<br>9     |
| 1       | 9         | 2 3 6     | 2 3 4 5 6        | 2 3 4 5 6        | 3 4 6 4 5 6 | 4 6 5 6 4 5<br>8 7 8 | 3 4 5<br>7 8 |
| 2 7     | 2 3 6 7   | 5         | 4 2 3 6          | 9                | 8           | 4 6 3 6              | 1            |
| 5 8     | 4         | 1 3 8     | 9                | 1 3 1 3<br>6 5 6 | 7           | 1 3 5 6 8            | 2            |
| 5 8 9   | 5         | 7         | 1 5 6 8          | 2                | 1 6 8 9     | 4 5 8 9              | 3            |
| 6       | 2 3 5     | 1 2 3 8 9 | 1 3 4 5          | 1 3 4 5          | 1 3 4 5     | 1 5 8 9 8 9          | 3            |
| 2 7 9   | 1 4 6 9   | 8         | 4 2 6 4 6<br>7 7 | 5                | 3 4 6 7 9   | 5 7 9                |              |
| 3       | 2 7       | 4 8 9     | 1 2 4            | 5 7              | 1 4 8 9     | 1 2 7 8 9            | 6            |
| 2 5 7 8 | 2 5 6 4 8 | 2 6 4 6 4 | 1 2 4 6          | 9                | 3 7 8       | 4 7 8                |              |



|                          |                        |                          |                          |                          |                            |                            |                        |                            |
|--------------------------|------------------------|--------------------------|--------------------------|--------------------------|----------------------------|----------------------------|------------------------|----------------------------|
| 8                        | 6                      | <sup>1 2</sup><br>4      | <sup>1</sup><br>5        | <sup>2 3</sup><br>5      | <sup>1 2 3</sup><br>4      | <sup>2 3</sup><br>4 5<br>9 | 7                      | <sup>2 3</sup><br>4 5<br>9 |
| 9                        | <sup>1</sup><br>5<br>7 | <sup>1 2</sup><br>4<br>7 | <sup>1</sup><br>5<br>7   | 8                        | <sup>1 2 3</sup><br>4<br>7 | <sup>2 3</sup><br>4 5      | <sup>3</sup><br>4 5    | 6                          |
| <sup>2</sup><br>4 5<br>7 | 5                      | 3                        | <sup>5 6</sup><br>7      | <sup>2</sup><br>5 6      | 9                          | 1                          | 8                      | <sup>2</sup><br>4 5        |
| <sup>1</sup><br>4<br>7   | <sup>1</sup><br>3<br>7 | 8                        | <sup>3</sup><br>6<br>7   | 9                        | 5                          | <sup>2 3</sup><br>4<br>7   | <sup>1</sup><br>3<br>4 | <sup>1 2 3</sup><br>4<br>7 |
| <sup>1</sup><br>5<br>7   | 2                      | <sup>1</sup><br>7<br>9   | 4                        | <sup>3</sup><br>7        | 8                          | <sup>5</sup><br>7<br>9     | <sup>3</sup><br>6<br>7 | <sup>1</sup><br>5<br>9     |
| <sup>4 5 6</sup><br>7    | <sup>3</sup><br>5<br>7 | <sup>4</sup><br>6<br>7   | 2                        | 1                        | <sup>3</sup><br>6<br>7     | 8                          | <sup>4 5</sup><br>9    | <sup>3</sup><br>4 5<br>7   |
| <sup>1 2</sup><br>7      | 8                      | 5                        | <sup>1</sup><br>7<br>9   | <sup>2 3</sup><br>7      | <sup>1 2 3</sup><br>7      | 6                          | <sup>1</sup><br>4<br>9 | <sup>1</sup><br>3<br>7     |
| 3                        | <sup>1</sup><br>7<br>9 | <sup>1 2</sup><br>6<br>7 | <sup>5 6</sup><br>7<br>9 | 4                        | <sup>1 2</sup><br>6<br>7   | <sup>5</sup><br>7<br>9     | <sup>1</sup><br>5<br>9 | 8                          |
| <sup>1</sup><br>6<br>7   | 4                      | <sup>1</sup><br>6<br>7   | 8                        | <sup>3</sup><br>5 6<br>7 | <sup>1</sup><br>3<br>7     | <sup>5</sup><br>7<br>9     | 2                      | <sup>1</sup><br>5<br>9     |

|                        |                        |                          |                          |                          |                          |                          |                            |                          |
|------------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|--------------------------|
| <sup>1</sup><br>9      | 3                      | <sup>2</sup><br>5 6<br>7 | <sup>2</sup><br>4 5<br>7 | <sup>2</sup><br>4<br>7   | <sup>4 5</sup><br>7<br>9 | <sup>4</sup><br>5 6<br>8 | <sup>4 5 6</sup><br>7<br>8 | <sup>1</sup><br>6<br>7 8 |
| 8                      | 7                      | <sup>2</sup><br>5        | 6                        | <sup>4</sup><br>2        | 1                        | 9                        | <sup>4 5</sup><br>7 8      | 3                        |
| <sup>1</sup><br>9      | 4                      | <sup>5 6</sup><br>7      | <sup>3</sup><br>5<br>9   | <sup>3</sup><br>7<br>9   | <sup>3</sup><br>5<br>9   | <sup>5 6</sup><br>8      | <sup>2</sup><br>7 8        | <sup>1</sup><br>6        |
| 2                      | <sup>1</sup><br>5<br>7 | <sup>1</sup><br>4<br>7   | <sup>3</sup><br>7        | 8                        | <sup>4</sup><br>7<br>9   | 6                        | <sup>4 5</sup><br>7<br>9   | <sup>4 5</sup><br>7<br>9 |
| <sup>5</sup><br>7<br>9 | <sup>3</sup><br>8      | 9                        | <sup>2 3</sup><br>4<br>7 | <sup>2 3</sup><br>4<br>7 | <sup>3</sup><br>4<br>7   | 1                        | <sup>4 5 6</sup><br>7<br>8 | <sup>6</sup><br>7<br>8   |
| <sup>3</sup><br>7      | <sup>6</sup><br>8      | <sup>4</sup><br>7        | <sup>3</sup><br>7        | 1                        | 5                        | <sup>4</sup><br>7<br>9   | <sup>2 3</sup><br>4<br>6   | <sup>2</sup><br>7 8<br>9 |
| 4                      | <sup>1</sup><br>9<br>7 | <sup>1</sup><br>3<br>7   | <sup>3</sup><br>7        | <sup>3</sup><br>6<br>7   | 2                        | <sup>6</sup><br>8        | <sup>6</sup><br>8 9        | 5                        |
| <sup>5</sup><br>7<br>9 | <sup>5</sup><br>9<br>7 | <sup>3</sup><br>7        | <sup>4</sup><br>7        | <sup>3</sup><br>4<br>6   | 8                        | <sup>2</sup><br>6        | 1                          | <sup>2</sup><br>6<br>9   |
| 6                      | 2                      | 8                        | <sup>5</sup><br>9        | 1                        | <sup>5</sup><br>9        | 7                        | 3                          | 4                        |

|                          |                        |                          |                        |                          |                            |                            |                              |
|--------------------------|------------------------|--------------------------|------------------------|--------------------------|----------------------------|----------------------------|------------------------------|
| 2                        | <sup>1</sup><br>3<br>7 | <sup>1</sup><br>5<br>9   | <sup>3</sup><br>5<br>9 | 4                        | 8                          | <sup>1</sup><br>5 6<br>7   | <sup>1</sup><br>6<br>9       |
| 6                        | 9                      | 5                        | <sup>1</sup><br>8      | 7                        | <sup>1 2</sup><br>3<br>5   | 3                          | 4                            |
| <sup>1</sup><br>3<br>7 8 | <sup>1</sup><br>3<br>8 | 4                        | 6                      | <sup>2 3</sup><br>5<br>9 | <sup>1 2 3</sup><br>5<br>9 | <sup>1 2</sup><br>7<br>9   | <sup>1 2</sup><br>7<br>9     |
| <sup>5</sup><br>7 8 9    | <sup>5</sup><br>8      | <sup>2</sup><br>7 8 9    | 4                      | 1                        | <sup>2</sup><br>5 6<br>9   | <sup>2 3</sup><br>7<br>9   | <sup>2</sup><br>6<br>7 8 9   |
| <sup>1</sup><br>7 8 9    | 4                      | 3                        | <sup>2</sup><br>6<br>7 | <sup>2</sup><br>6<br>9   | <sup>1 2</sup><br>7<br>9   | <sup>1 2</sup><br>6<br>7 8 | 5                            |
| <sup>1</sup><br>5<br>7   | 6                      | <sup>1 2</sup><br>7<br>9 | 3                      | <sup>2</sup><br>5<br>7   | 8                          | 4                          | <sup>1 2</sup><br>7<br>9     |
| 4                        | 7                      | <sup>1</sup><br>8 9      | 2                      | <sup>3</sup><br>8 9      | <sup>1</sup><br>6<br>9     | 5                          | <sup>1</sup><br>8            |
| <sup>1</sup><br>5<br>8   | <sup>1</sup><br>5<br>8 | <sup>3</sup><br>6<br>8   | <sup>1</sup><br>7 8 9  | <sup>5</sup><br>7 8 9    | <sup>3</sup><br>9          | <sup>1 2 3</sup><br>7      | <sup>1 2 3</sup><br>4<br>7 8 |
| <sup>1</sup><br>5<br>8   | 2                      | <sup>1</sup><br>8        | <sup>1</sup><br>7 8    | 4                        | <sup>1</sup><br>5          | 6                          | 9                            |

|                          |                        |                          |                       |                          |                          |                          |                          |                          |
|--------------------------|------------------------|--------------------------|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <sup>1 2</sup><br>7      | 8                      | <sup>1</sup><br>4<br>7   | <sup>1</sup><br>4 5   | 3                        | <sup>2</sup><br>4 5<br>7 | <sup>1 2</sup><br>9      | 6                        | <sup>1 2</sup><br>9      |
| 9                        | <sup>1</sup><br>5      | <sup>1</sup><br>3        | <sup>1</sup><br>3     | 6                        | <sup>1 2</sup><br>5<br>8 | <sup>2</sup><br>5<br>8   | 4                        | <sup>1 2 3</sup><br>7    |
| <sup>1 2 3</sup><br>7    | <sup>1</sup><br>6      | <sup>3</sup><br>4        | <sup>3</sup><br>6     | 9                        | <sup>4</sup><br>7        | <sup>2</sup><br>4        | 8                        | <sup>1 2 3</sup><br>5    |
| <sup>1</sup><br>7 8      | <sup>3</sup><br>4      | 5                        | <sup>1</sup><br>8 9   | <sup>1 2</sup><br>6      | <sup>2 3</sup><br>8 9    | <sup>1 2 3</sup><br>7    | <sup>1 2</sup><br>9      | <sup>1 2</sup><br>6<br>9 |
| <sup>1</sup><br>8        | <sup>3</sup><br>6      | 2                        | 7                     | <sup>1</sup><br>4 5<br>8 | <sup>4 5</sup><br>8 9    | <sup>3</sup><br>5<br>9   | <sup>1</sup><br>5<br>9   | <sup>1</sup><br>9        |
| <sup>1</sup><br>7        | <sup>3</sup><br>7      | 9                        | <sup>1</sup><br>5     | <sup>1 2</sup><br>5 6    | <sup>2 3</sup><br>5 6    | <sup>1 2 3</sup><br>7    | 8                        | 4                        |
| <sup>1</sup><br>5 6      | 2                      | <sup>1</sup><br>6        | <sup>4 5</sup><br>8 9 | <sup>4 5 6</sup><br>8    | <sup>4 5 6</sup><br>8 9  | <sup>1</sup><br>5 6<br>9 | 7                        | <sup>1</sup><br>6<br>8 9 |
| 4                        | <sup>1</sup><br>5<br>9 | <sup>1</sup><br>6<br>8   | <sup>5</sup><br>8 9   | 7                        | <sup>5 6</sup><br>8 9    | <sup>1 2</sup><br>5<br>9 | <sup>1 2</sup><br>5<br>9 | 3                        |
| <sup>3</sup><br>5 6<br>7 | <sup>3</sup><br>5<br>7 | <sup>3</sup><br>6<br>7 8 | 2                     | <sup>5 6</sup><br>8      | 1                        | <sup>5 6</sup><br>9      | 4                        | <sup>6</sup><br>8 9      |

|                        |                        |                          |                            |                            |                            |                          |
|------------------------|------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------------|
| 6                      | 9                      | 4                        | <sup>2 3</sup><br>5<br>8   | <sup>2 3</sup><br>5        | <sup>2 3</sup><br>7 8      | <sup>3</sup><br>1<br>7 8 |
| <sup>1</sup><br>5<br>8 | 2                      | <sup>5</sup><br>8        | <sup>1</sup><br>6<br>8     | 7                          | <sup>1</sup><br>4<br>6     | 9                        |
| <sup>1</sup><br>7 8    | <sup>1</sup><br>3<br>7 | <sup>3</sup><br>7 8      | <sup>1</sup><br>6<br>8 9   | <sup>1</sup><br>3<br>9     | <sup>1</sup><br>3<br>6 4   | 2                        |
| <sup>2 3</sup><br>7    | <sup>5</sup><br>7      | <sup>3</sup><br>6<br>9   | <sup>1 2</sup><br>5 6<br>9 | <sup>1 2</sup><br>5 6<br>9 | <sup>1 2</sup><br>6<br>7 9 | 4                        |
| 4                      | 8                      | 1                        | <sup>3</sup><br>6<br>9     | <sup>3</sup><br>6<br>9     | <sup>3</sup><br>6<br>9     | 5                        |
| <sup>2</sup><br>5<br>7 | <sup>5</sup><br>7      | <sup>6</sup><br>9        | <sup>1 2</sup><br>5 6<br>9 | 4                          | 8                          | <sup>1</sup><br>6<br>7   |
| 9                      | <sup>1</sup><br>5<br>7 | <sup>2</sup><br>5<br>7 8 | 4                          | <sup>1 2 3</sup><br>6      | <sup>1 2 3</sup><br>6      | <sup>1</sup><br>3<br>7 8 |
| <sup>1</sup><br>8      | 6                      | <sup>2</sup><br>8        | 7                          | <sup>1 2 3</sup><br>9      | 5                          | <sup>1</sup><br>3<br>8 9 |
| <sup>1</sup><br>5<br>7 | 4                      | 3                        | <sup>1 2</sup><br>6<br>9   | 8                          | <sup>1 2</sup><br>6<br>9   | <sup>1</sup><br>6<br>7   |

|                            |                              |                        |                          |                            |                            |                          |                            |                            |
|----------------------------|------------------------------|------------------------|--------------------------|----------------------------|----------------------------|--------------------------|----------------------------|----------------------------|
| 1                          | <sup>3</sup><br>9            | <sup>2</sup><br>8      | 7                        | <sup>2</sup><br>5<br>8     | <sup>2</sup><br>5          | 6                        | <sup>3</sup><br>4<br>9     | <sup>3</sup><br>4<br>9     |
| <sup>3</sup><br>5 6<br>8   | 4                            | <sup>2</sup><br>8      | <sup>2</sup><br>6<br>8   | 9                          | <sup>1 2</sup><br>6        | <sup>1</sup><br>5<br>7 8 | <sup>3</sup><br>7 8        | <sup>1</sup><br>3<br>5 8   |
| <sup>5 6</sup><br>8 9      | <sup>5 6</sup><br>8 9        | 7                      | 4                        | <sup>1</sup><br>6<br>8     | 3                          | 2                        | <sup>1</sup><br>5<br>8 9   | <sup>1</sup><br>8 9        |
| <sup>3</sup><br>4 6<br>8 9 | <sup>2 3</sup><br>6<br>8 9   | <sup>4</sup><br>8      | 1                        | <sup>2</sup><br>5 6<br>7   | <sup>2</sup><br>4 5 6<br>9 | <sup>5</sup><br>8 9      | <sup>2 3</sup><br>6<br>8 9 | <sup>2 3</sup><br>5<br>8 9 |
| <sup>3</sup><br>4 6<br>8 9 | <sup>1 2 3</sup><br>6<br>8 9 | <sup>1</sup><br>4<br>8 | <sup>2</sup><br>5 6<br>9 | <sup>2</sup><br>5 6<br>9   | <sup>2</sup><br>4 5 6<br>9 | <sup>5</sup><br>8 9      | <sup>2 3</sup><br>6<br>8 9 | 7                          |
| 7                          | <sup>2</sup><br>6<br>9       | 5                      | <sup>2</sup><br>6<br>9   | 3                          | 8                          | 4                        | 1                          | <sup>2</sup><br>9          |
| 2                          | <sup>1</sup><br>8            | 3                      | <sup>6</sup><br>8 9      | 4                          | <sup>1</sup><br>6<br>7     | <sup>1</sup><br>7 8 9    | 5                          | <sup>1</sup><br>8 9        |
| <sup>4 5</sup><br>8        | <sup>1</sup><br>5<br>8       | <sup>1</sup><br>4<br>8 | <sup>2</sup><br>5<br>8 9 | <sup>1 2</sup><br>7 8      | <sup>1 2</sup><br>5<br>9   | 3                        | <sup>2</sup><br>4<br>7 8 9 | 6                          |
| <sup>4 5 6</sup><br>8      | 7                            | 9                      | 3                        | <sup>1 2</sup><br>5 6<br>8 | <sup>1 2</sup><br>5 6      | <sup>1</sup><br>8        | <sup>2</sup><br>4<br>8     | <sup>1 2</sup><br>4<br>8   |

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 9 | 5 | 6 | 4 | 2 | 8 | 1 | 3 | 1 | 3 |
| 4 | 3 | 3 | 3 | 5 | 5 | 1 | 2 | 2 | 2 | 2 |
| 1 | 4 | 6 | 2 | 1 | 3 | 5 | 4 | 5 | 6 | 4 |
| 2 | 7 | 8 | 7 | 8 | 9 | 1 | 3 | 3 | 1 | 3 |
| 1 | 5 | 9 | 4 | 5 | 1 | 3 | 2 | 1 | 3 | 3 |
| 1 | 5 | 3 | 4 | 6 | 2 | 7 | 3 | 1 | 2 | 3 |
| 3 | 6 | 7 | 1 | 3 | 6 | 4 | 2 | 3 | 2 | 3 |
| 1 | 3 | 3 | 1 | 3 | 6 | 2 | 4 | 5 | 6 | 4 |
| 8 | 5 | 4 | 7 | 9 | 2 | 7 | 1 | 3 | 1 | 3 |

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 4 | 3 | 4 | 3 | 2 | 7 | 3 | 1 | 4 | 3 |
| 4 | 3 | 3 | 4 | 3 | 7 | 6 | 5 | 6 | 1 | 2 |
| 1 | 3 | 2 | 8 | 5 | 4 | 7 | 5 | 6 | 3 | 3 |
| 2 | 3 | 6 | 4 | 3 | 5 | 2 | 3 | 7 | 4 | 3 |
| 2 | 3 | 5 | 4 | 3 | 1 | 2 | 3 | 6 | 4 | 3 |
| 3 | 1 | 7 | 9 | 4 | 8 | 3 | 6 | 2 | 5 | 6 |
| 8 | 9 | 2 | 5 | 8 | 3 | 4 | 5 | 6 | 1 | 7 |
| 6 | 4 | 3 | 1 | 7 | 9 | 7 | 9 | 5 | 4 | 3 |
| 4 | 3 | 7 | 4 | 5 | 9 | 6 | 1 | 8 | 4 | 5 |

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | 6 | 3 | 1 | 5 | 6 | 1 | 4 | 6 | 7 |
| 5 | 1 | 4 | 6 | 1 | 2 | 6 | 7 | 1 | 3 | 2 |
| 7 | 1 | 6 | 8 | 9 | 4 | 1 | 2 | 3 | 1 | 3 |
| 4 | 1 | 2 | 3 | 1 | 2 | 5 | 4 | 6 | 7 | 3 |
| 4 | 6 | 4 | 8 | 4 | 5 | 7 | 9 | 4 | 5 | 1 |
| 4 | 6 | 1 | 2 | 7 | 3 | 1 | 2 | 8 | 4 | 6 |
| 1 | 7 | 8 | 9 | 6 | 4 | 8 | 7 | 9 | 5 | 2 |
| 3 | 2 | 7 | 8 | 9 | 1 | 6 | 5 | 7 | 9 | 8 |
| 4 | 8 | 9 | 5 | 4 | 8 | 9 | 2 | 8 | 9 | 7 |

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 2 | 5 | 6 | 2 | 3 | 1 | 7 | 5 | 9 | 3 |
| 3 | 6 | 7 | 8 | 9 | 4 | 7 | 8 | 2 | 4 | 1 |
| 1 | 5 | 7 | 8 | 7 | 8 | 6 | 4 | 5 | 7 | 9 |
| 2 | 6 | 3 | 4 | 2 | 9 | 4 | 5 | 8 | 1 | 5 |
| 2 | 6 | 4 | 8 | 9 | 5 | 4 | 7 | 1 | 2 | 3 |
| 2 | 1 | 2 | 4 | 8 | 6 | 3 | 1 | 2 | 4 | 5 |
| 2 | 3 | 2 | 6 | 8 | 9 | 1 | 5 | 7 | 9 | 4 |
| 5 | 9 | 4 | 1 | 7 | 8 | 3 | 2 | 7 | 9 | 5 |
| 7 | 4 | 2 | 9 | 4 | 5 | 6 | 1 | 3 | 1 | 3 |

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 2 | 4 | 3 | 8 | 3 | 5 | 6 | 7 | 6 |
| 7 | 8 | 5 | 3 | 7 | 6 | 9 | 1 | 2 | 4 | 7 |
| 7 | 8 | 9 | 7 | 8 | 7 | 9 | 5 | 2 | 4 | 3 |
| 4 | 2 | 1 | 2 | 4 | 7 | 9 | 8 | 3 | 2 | 1 |
| 6 | 1 | 2 | 3 | 1 | 2 | 9 | 4 | 5 | 7 | 3 |
| 4 | 7 | 8 | 9 | 4 | 7 | 8 | 1 | 6 | 5 | 7 |
| 3 | 1 | 2 | 7 | 4 | 5 | 2 | 6 | 1 | 2 | 3 |
| 4 | 5 | 7 | 2 | 6 | 9 | 1 | 3 | 2 | 5 | 4 |
| 2 | 9 | 1 | 2 | 6 | 2 | 3 | 7 | 8 | 5 | 4 |

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | 7 | 6 | 3 | 7 | 2 | 1 | 4 | 9 | 8 |
| 4 | 3 | 2 | 3 | 4 | 7 | 8 | 1 | 6 | 4 | 5 |
| 8 | 1 | 2 | 3 | 1 | 3 | 5 | 4 | 6 | 4 | 6 |
| 2 | 7 | 2 | 9 | 1 | 4 | 6 | 8 | 3 | 1 | 4 |
| 1 | 3 | 1 | 3 | 1 | 3 | 9 | 5 | 7 | 1 | 4 |
| 5 | 1 | 6 | 4 | 6 | 2 | 4 | 3 | 7 | 1 | 4 |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 6 | 7 | 9 |
| 6 | 1 | 3 | 1 | 3 | 8 | 2 | 4 | 9 | 1 | 4 |
| 7 | 8 | 1 | 2 | 3 | 4 | 6 | 4 | 6 | 4 | 6 |

|            |             |             |          |              |                 |                 |               |                 |               |
|------------|-------------|-------------|----------|--------------|-----------------|-----------------|---------------|-----------------|---------------|
| 1 2<br>9   | 2<br>5<br>9 | 4 5<br>7 9  | 1<br>7   | 6<br>9       | 4 5 6<br>7 8 9  | 3               | 1 2<br>5      | 1 2<br>8 9      | 1 2<br>4<br>9 |
| 8          | 5<br>9      | 4 5<br>9    | 2        | 4 5<br>9     | 1<br>4<br>9     | 6               | 7             | 1<br>4<br>9     | 3             |
| 1 2 3<br>9 | 6           | 4 5<br>7 9  | 1<br>7   | 4 5<br>7 8 9 | 1<br>4<br>7 8 9 | 1 2<br>5        | 1 2 3<br>8 9  | 1 2 3<br>4<br>9 | 1 2 3<br>6    |
| 5          | 1           | 3<br>8      | 6<br>7 9 | 3<br>8       | 2               | 7 9             | 4             | 6<br>7 9        | 6             |
| 2<br>9     | 2<br>8 9    | 6<br>8 9    | 1<br>7   | 6<br>7 9     | 4 6<br>7 8 9    | 1<br>4<br>7 8 9 | 3             | 5               | 1<br>6<br>7 9 |
| 4          | 7           | 3<br>6<br>9 | 5        | 3<br>6<br>9  | 1<br>6<br>9     | 1 2<br>9        | 1 2<br>6<br>9 | 8               | 8             |
| 7          | 3<br>5<br>9 | 1<br>5<br>9 | 4        | 2<br>6<br>9  | 6<br>6<br>9     | 8               | 1 2 3<br>9    | 1 2 3<br>9      | 3             |
| 3<br>9     | 4           | 2           | 8        | 1            | 5               | 7 9             | 3<br>6<br>9   | 6<br>7 9        | 6             |
| 6          | 1<br>8 9    | 8 9         | 3        | 2<br>7 9     | 7 9             | 4               | 1 2<br>9      | 5               | 5             |

|             |             |          |             |               |                 |                  |               |          |            |
|-------------|-------------|----------|-------------|---------------|-----------------|------------------|---------------|----------|------------|
| 3           | 1<br>4<br>7 | 6<br>7   | 1<br>5<br>7 | 4 5<br>7      | 9               | 2<br>4<br>5<br>7 | 1<br>7        | 1 2<br>6 | 8          |
| 4<br>7      | 2           | 1<br>7 8 | 6           | 1<br>7 8      | 3<br>4<br>7 8   | 5                | 1<br>3<br>6   | 4        | 1 2 3<br>6 |
| 5 6<br>7 9  | 1<br>7 9    | 1<br>6 9 | 5<br>7 8 9  | 3<br>5<br>7 8 | 1 2<br>5<br>7 8 | 2 3<br>5<br>7 8  | 1<br>3<br>6   | 4        | 1 2 3<br>6 |
| 8           | 1<br>7 9    | 6<br>6 9 | 4           | 2<br>4        | 3<br>8 9        | 3<br>5<br>4 8    | 1<br>6<br>9   | 5<br>9   | 1<br>5 6   |
| 2<br>6<br>9 | 1<br>9      | 3<br>6 9 | 1 2 3<br>9  | 4<br>8 9      | 5               | 4<br>6           | 1<br>3<br>4 6 | 3<br>9   | 7          |
| 5 6<br>7 9  | 3<br>7 9    | 3<br>6 9 | 5<br>7 9    | 4<br>7 8 9    | 6<br>7 8        | 1                | 2             | 3<br>8 9 | 4<br>6     |
| 2<br>7 9    | 8           | 6        | 1           | 4             | 2 3<br>5<br>7   | 3<br>9           | 2 3<br>5<br>9 | 2 3<br>5 | 2 3        |
| 4<br>9      | 2<br>4<br>9 | 3<br>9   | 2 3<br>9    | 5<br>8        | 2<br>8          | 2 3<br>5 6<br>8  | 1<br>3<br>8 9 | 7        | 1 2 3<br>5 |
| 1           | 5           | 2 3<br>7 | 3<br>7 8    | 2<br>7 8      | 9               | 4<br>8           | 3<br>6        | 4        | 2 3        |

|              |          |                 |            |          |               |                 |              |                 |               |
|--------------|----------|-----------------|------------|----------|---------------|-----------------|--------------|-----------------|---------------|
| 2<br>8 9     | 6        | 2<br>4 5<br>8 9 | 3          | 2<br>7   | 4<br>8 9      | 2<br>4 5<br>7 9 | 1<br>4<br>7  | 1 2<br>4<br>7 9 | 1 2<br>4<br>9 |
| 2 3<br>8 9   | 4        | 3<br>8 9        | 1          | 5        | 2<br>4<br>8 9 | 2<br>4<br>7 9   | 6            | 4<br>7 9        | 2<br>9        |
| 7            | 4        | 2<br>5<br>9     | 4          | 6        | 1             | 2<br>5          | 3            | 8               | 8             |
| 1 3<br>8 6   | 1<br>4   | 3<br>8          | 7          | 1 2<br>4 | 5             | 2 3<br>4 6      | 4<br>8       | 9               | 2 3<br>4      |
| 5            | 2        | 4<br>6<br>9     | 3<br>7 9   | 8        | 4<br>7        | 3<br>6<br>9     | 1            | 4<br>7          | 4<br>7        |
| 1 3<br>8 9   | 1<br>4   | 3<br>8 9        | 3<br>8 9   | 1 2<br>4 | 1<br>7 9      | 2 3<br>4 7 9    | 2 3<br>4 7 8 | 5               | 6             |
| 1 2 3<br>8 9 | 7        | 2 3<br>8 9      | 1 2<br>8   | 4        | 5             | 6               | 1<br>8       | 1 3<br>9        | 3             |
| 4            | 1<br>8 9 | 3<br>8 9        | 2 3<br>8 9 | 6        | 1<br>7        | 3<br>7 9        | 2 3<br>7 8   | 3<br>7 8        | 5             |
| 1 3<br>8 6   | 5        | 3<br>6<br>8     | 1<br>7 8   | 9        | 3<br>7        | 4<br>7          | 2            | 1<br>4<br>7     | 3             |

|             |               |            |                   |                   |               |                 |            |                 |                 |
|-------------|---------------|------------|-------------------|-------------------|---------------|-----------------|------------|-----------------|-----------------|
| 1<br>4<br>7 | 1 2<br>4<br>7 | 3          | 6<br>7 8          | 4<br>8            | 6<br>8        | 5               | 4<br>8     | 9               | 1 2<br>4<br>7 8 |
| 8           | 4<br>7        | 4<br>7 9   | 3<br>7 9          | 2                 | 1             | 4 5<br>7        | 3<br>5     | 6               | 3               |
| 1<br>4<br>7 | 6             | 5          | 1 2<br>4 6<br>7 9 | 3<br>6 4<br>7 8 9 | 3<br>6 4<br>8 | 4<br>6 4<br>8 9 | 3<br>8     | 1 2 3<br>4 7 8  | 1 2 3<br>4 7 8  |
| 1<br>9      | 3<br>6        | 1<br>8 9   | 2                 | 5                 | 8 9           | 7               | 4          | 1<br>8 9        | 3               |
| 1<br>4      | 1 2<br>9      | 1 2<br>4 8 | 1 2<br>4 8 9      | 1<br>8 9          | 6<br>8 9      | 7               | 3          | 1<br>6          | 5               |
| 5           | 1<br>7 8      | 3<br>7 8 9 | 1<br>7 8 9        | 1<br>8 9          | 6<br>8 9      | 4<br>6 4<br>8 9 | 2          | 1<br>3<br>6     | 1<br>3<br>8 9   |
| 2           | 1<br>4        | 3<br>4 5 6 | 1<br>4 5 6        | 1<br>6            | 3<br>6        | 7               | 4 5 6<br>9 | 8               | 3<br>9          |
| 3<br>7      | 6<br>7 8      | 3<br>7 8   | 5 6<br>7 8        | 4                 | 9             | 2<br>8 6        | 1          | 2 3<br>5 6<br>7 | 2 3             |
| 1<br>4<br>7 | 3<br>4 6      | 9          | 1<br>4 6          | 3<br>7 8          | 5             | 1<br>8          | 3<br>6     | 2<br>6 4        | 3<br>2 3<br>4 7 |

|            |            |        |             |                 |                 |             |                  |                  |                  |
|------------|------------|--------|-------------|-----------------|-----------------|-------------|------------------|------------------|------------------|
| 1<br>8 9   | 5          | 2      | 4<br>6<br>9 | 3<br>6<br>9     | 1<br>6<br>9     | 3<br>4<br>6 | 1<br>6<br>9      | 3<br>4<br>6      | 3<br>4<br>6      |
| 1<br>8 9   | 6<br>8 9   | 4      | 7           | 5               | 1 2 3<br>6<br>9 | 3<br>6      | 2 3<br>6<br>9    | 2 3<br>6<br>8 9  | 2 3<br>6<br>8 9  |
| 6<br>9     | 7          | 3      | 4           | 2<br>6<br>9     | 8               | 5           | 4                | 1                | 1                |
| 1 2 3<br>7 | 1 2<br>7 8 | 6      | 4<br>9      | 2 3<br>7 9      | 3<br>9          | 5           | 1<br>4<br>7      | 3<br>8           | 4<br>9           |
| 3<br>7 8   | 4          | 7 8    | 1           | 3<br>6<br>7 8 9 | 3<br>6<br>9     | 2           | 3<br>5<br>6<br>9 | 3<br>5<br>6<br>9 | 3<br>5<br>6<br>9 |
| 5          | 1 2<br>8   | 9      | 4<br>8      | 2 3<br>7 8      | 3<br>6 4        | 2 3<br>6 4  | 1 3<br>4 6       | 1 3<br>4 6       | 3<br>4 6         |
| 2<br>4 6   | 2<br>6     | 1<br>5 | 3<br>8      | 1<br>6          | 3<br>8          | 1<br>6      | 1 2 3<br>4 5 6   | 7                | 7                |
| 4<br>9     | 3          | 1<br>5 | 6<br>9      | 2               | 7               | 8           | 1<br>4 5 6       | 4 5 6            | 4 5 6            |
| 2<br>7 8 9 | 2<br>8 9   | 7 8    | 5           | 4               | 1<br>6<br>9     | 3<br>6      | 1 2 3<br>6       | 2 3<br>6         | 2 3<br>6         |

|          |          |        |                |             |            |               |                |            |            |
|----------|----------|--------|----------------|-------------|------------|---------------|----------------|------------|------------|
| 2 3<br>4 | 2<br>4 8 | 3<br>8 | 1<br>8         | 3<br>8      | 7          | 1<br>4<br>8   | 3<br>8         | 6<br>9     | 6<br>9     |
| 6        | 4<br>7 8 | 1      | 5              | 9           | 2          | 4<br>8        | 3<br>4 8       | 4<br>7     | 4<br>7     |
| 4<br>7   | 3<br>9   | 5      | 3<br>8         | 6           | 4<br>8     | 3<br>4 8      | 1 2<br>4 8     | 2<br>4 8   | 1 2<br>4 7 |
| 8        | 1 2<br>7 | 4<br>7 | 6<br>7 9       | 1 2<br>7    | 5 6<br>7   | 4<br>6 9      | 4 5 6<br>9     | 3          | 3          |
| 1 2<br>5 | 6        | 4<br>7 | 1 2 3<br>7 8 9 | 1 2 3<br>8  | 1<br>5 7 8 | 3<br>4 8 9    | 1 2<br>4 5 8 9 | 2<br>4     | 1 2<br>4 9 |
| 1 2<br>5 | 3        | 9      | 1 2<br>8       | 6<br>7      | 4          | 1<br>5 6 8    | 7              | 2<br>5 6 8 | 1 2<br>6   |
| 4<br>9   | 3<br>5   | 6<br>8 | 2 3<br>7 8     | 2 3<br>8    | 2 3<br>7 8 | 3<br>6 4 9    | 2 3<br>6 4 9   | 1<br>4 6 9 | 2<br>4 6 9 |
| 1<br>4   | 3<br>9   | 1<br>4 | 2<br>6         | 1<br>3<br>6 | 5          | 1<br>3<br>6 4 | 3<br>6 9       | 7          | 8          |
| 1<br>7   | 3<br>7 8 | 1<br>8 | 3<br>6         | 4<br>8      | 9          | 5<br>6        | 2 3<br>6       | 2<br>6     | 2<br>6     |

|                             |  |  |  |  |  |  |  |
|-----------------------------|--|--|--|--|--|--|--|
| 1                           | <sup>4</sup> <sub>7</sub> <sup>2 3</sup> | <sup>4</sup> <sub>7</sub> <sup>2 3</sup> | <sup>4 5</sup> <sub>7</sub> <sup>7 8</sup> | <sup>4 5</sup> <sub>8</sub>              | <sup>7</sup> <sub>8</sub> <sup>3 6</sup> | 9  | <sup>7</sup> <sub>8</sub> <sup>3 6</sup>   |
| <sup>4</sup> <sub>8</sub>   | 6  | 5  | <sup>4</sup> <sub>7</sub>                  | 2  | 9  | <sup>7 8</sup> <sub>7 8</sub> <sup>1 3</sup> | <sup>1 3</sup> <sub>7</sub> <sup>1 3</sup> |
| <sup>4</sup> <sub>8 9</sub> | <sup>4</sup> <sub>7 8 9</sub>            | <sup>4</sup> <sub>7</sub>                | 6  | 3  | 1  | 5  | <sup>4</sup> <sub>7 8</sub> 2              |
| 2                           | <sup>1</sup> <sub>9</sub> <sup>3</sup>   | 6  | <sup>1</sup> <sub>8</sub>                  | 4  | 7  | <sup>3 1</sup> <sub>8 9</sub> <sup>3</sup>   | 5  |
| <sup>4</sup> <sub>9</sub>   | <sup>1</sup> <sub>7 9</sub>              | 8  | 3  | 5  | 6  | <sup>7</sup> <sub>9</sub>                    | <sup>1</sup> <sub>7</sub> 2                |
| 5                           | <sup>1</sup> <sub>7</sub> <sup>3</sup>   | <sup>1</sup> <sub>7</sub> <sup>3</sup>   | <sup>1 2</sup> <sub>8</sub>                | 9  | 2  | <sup>3 1</sup> <sub>7 8</sub> <sup>3 6</sup> | 4  |
| <sup>4</sup> <sub>6</sub>   | <sup>2 3</sup> <sub>4</sub>              | 9  | <sup>4 5</sup> <sub>7</sub>                | <sup>6</sup> <sub>7</sub> <sup>4 5</sup> | <sup>2 3</sup> <sub>4 5</sub>            | 1  | <sup>5 6</sup> <sub>7</sub> 8              |
| <sup>4</sup> <sub>6 8</sub> | <sup>1</sup> <sub>8</sub> <sup>3</sup>   | <sup>1</sup> <sub>4</sub> <sup>3</sup>   | 9  | <sup>1</sup> <sub>7</sub>                | <sup>6</sup> <sub>7</sub> <sup>4 5</sup> | 2  | <sup>5 6</sup> <sub>7</sub> <sup>3 6</sup> |
| 7                           | 5  | <sup>1 2 3</sup>                         | 2  | <sup>1</sup> <sub>8</sub>                | <sup>2 3</sup> <sub>8</sub>              | 4  | <sup>3</sup> <sub>6</sub> 9                |

|                                 |  |                               |                             |  |                                   |                               |   |
|---------------------------------|--|-------------------------------|-----------------------------|--|-----------------------------------|-------------------------------|---|
| 6                               | <sup>1</sup> <sub>5 9</sub>              | 7                             | 3                           | <sup>1 2</sup> <sub>4 9</sub> <sup>1 2</sup> | <sup>1 2</sup> <sub>4 9</sub>     | 8                             | <sup>1</sup> <sub>4 5</sub> <sup>1</sup> <sub>5</sub>       |
| <sup>1</sup> <sub>5 9</sub>     | <sup>1</sup> <sub>5 9</sub> <sup>3</sup> | <sup>4 5</sup> <sub>9</sub>   | <sup>4 5</sup> <sub>9</sub> | 8  | <sup>1</sup> <sub>4 6 9</sub>     | 7                             | <sup>1</sup> <sub>5 6</sub> <sup>3</sup>                    |
| <sup>1</sup> <sub>5 8</sub>     | <sup>3</sup> <sub>8</sub>                | 2                             | <sup>4 5</sup> <sub>8</sub> | <sup>4 5</sup> <sub>4</sub>                  | <sup>1</sup> <sub>4 6</sub>       | 7                             | <sup>1</sup> <sub>4 5 6</sub> <sup>3</sup> <sub>5 6</sub>   |
| <sup>2</sup> <sub>7 9</sub>     | <sup>5 6</sup> <sub>8 9</sub>            | 1                             | <sup>2</sup> <sub>7 9</sub> | <sup>6</sup> <sub>9</sub>                    | <sup>3</sup> <sub>8</sub>         | 4                             | <sup>3</sup> <sub>5 6</sub> <sup>2 3</sup> <sub>5 6 9</sub> |
| 4                               | <sup>5 6</sup> <sub>8 9</sub>            | <sup>2</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>7 9</sub> | <sup>1</sup> <sub>6 9</sub>                  | <sup>3 1 2</sup> <sub>5 6 7</sub> | <sup>1</sup> <sub>5 6</sub>   | <sup>1 2 3</sup> <sub>5 6 9</sub>                           |
| <sup>2</sup> <sub>7 9</sub>     | <sup>6</sup> <sub>9</sub>                | 3                             | <sup>2</sup> <sub>7 9</sub> | 5  | <sup>1</sup> <sub>4 6 9</sub>     | <sup>1 2</sup> <sub>6 7</sub> | <sup>1</sup> <sub>6</sub> 8                                 |
| <sup>2</sup> <sub>5 9</sub>     | 7  | <sup>2</sup> <sub>5 6 9</sub> | 1                           | <sup>4</sup> <sub>9</sub>                    | <sup>2</sup> <sub>4 5 9</sub>     | 3                             | <sup>2</sup> <sub>4 5 6</sub> 8                             |
| <sup>1 2</sup> <sub>5 8 9</sub> | 4  | <sup>2</sup> <sub>5 8 9</sub> | 6                           | 3  | <sup>2</sup> <sub>5 9</sub>       | <sup>1 2</sup> <sub>5</sub>   | <sup>1</sup> <sub>5</sub> 7                                 |
| <sup>1 2 3</sup> <sub>5</sub>   | <sup>1</sup> <sub>5 6</sub> <sup>3</sup> | <sup>2</sup> <sub>5 6</sub>   | 8                           | 7  | <sup>2</sup> <sub>4 5</sub>       | <sup>1 2</sup> <sub>5 6</sub> | <sup>1 2</sup> <sub>4 5 6</sub> 9                           |

|                           |  |  |                                 |                                 |                               |                                 |                               |                                 |
|---------------------------|--|--|---------------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|
| 5                         | 7  | <sup>1 2</sup> <sub>6 9</sub>              | <sup>2</sup> <sub>6</sub>       | <sup>2</sup> <sub>6 9</sub>     | 3                             | 4                               | 8                             | <sup>1 2</sup> <sub>6</sub>     |
| <sub>8</sub> <sup>6</sup> | <sup>2 3</sup> <sub>8</sub> <sup>6</sup> | <sup>2 3</sup> <sub>6 8 9</sub>            | 4                               | <sup>2</sup> <sub>5 6 9</sub>   | 1                             | <sub>9</sub> <sup>5 6</sup>     | 7                             | <sub>5 6</sub> <sup>2</sup>     |
| 4                         | <sup>1 2</sup> <sub>6</sub>              | <sup>1 2</sup> <sub>6 9</sub>              | 8                               | <sup>2</sup> <sub>5 6 9</sub>   | 7                             | <sup>1</sup> <sub>5 6 9</sub>   | <sup>1 2</sup> <sub>5 9</sub> | 3                               |
| 7                         | <sup>1</sup> <sub>6</sub> <sup>3</sup>   | <sup>1</sup> <sub>4 5 6</sub> <sup>3</sup> | <sup>1 2 3</sup> <sub>5 9</sub> | 8                               | <sup>2</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>5 9</sub>     | 6                             | 4                               |
| <sub>8</sub> <sup>1</sup> | 9  | <sup>1</sup> <sub>4 5 6 8</sub>            | <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>6 4 5 6</sub> | 2                             | 3                               | 7                             |                                 |
| 2                         | <sup>1</sup> <sub>4</sub> <sup>3</sup>   | <sup>1</sup> <sub>4 5 6</sub> <sup>3</sup> | <sup>1</sup> <sub>5 6 9</sub>   | 7                               | <sup>4 5 6</sup> <sub>9</sub> | <sup>1</sup> <sub>5 8 9</sub>   | <sup>1</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>5 8</sub>     |
| 9                         | 5  | <sup>1 2</sup> <sub>4 6 8</sub>            | 7                               | <sup>1 2 3</sup> <sub>6</sub>   | <sup>2</sup> <sub>6</sub>     | <sup>1</sup> <sub>6 4 8</sub>   | <sup>1 2</sup> <sub>6 8</sub> | <sup>1 2</sup> <sub>6</sub>     |
| 3                         | <sup>1 2</sup> <sub>6 8</sub>            | <sup>1 2</sup> <sub>6 8</sub>              | <sup>1 2</sup> <sub>5 6 9</sub> | 4                               | <sup>2</sup> <sub>5 6 9</sub> | 7                               | <sup>1 2</sup> <sub>5 8</sub> | <sup>1 2</sup> <sub>5 6 8</sub> |
| <sub>6</sub> <sup>1</sup> | <sup>1 2</sup> <sub>4 6</sub>            | 7  | <sup>1 2</sup> <sub>5 6</sub>   | <sup>1 2 3</sup> <sub>6</sub>   | 8                             | <sup>1</sup> <sub>5 6 4 5</sub> | <sup>1 2</sup> <sub>4 5</sub> | 9                               |

|                               |                                 |                               |                               |                             |                               |                                 |                                 |  |
|-------------------------------|---------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|---------------------------------|---------------------------------|--|
| <sup>4</sup> <sub>7 8 9</sub> | <sup>4 5</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>7 9</sub>   | 2                             | 1                           | 3                             | <sup>5 6</sup> <sub>7</sub>     | <sup>4 5</sup> <sub>7</sub>     | <sup>4</sup> <sub>7 6</sub>              |
| <sup>1</sup> <sub>4 7</sub>   | 6                               | <sup>2 3</sup> <sub>4 7</sub> | <sup>5</sup> <sub>7</sub>     | <sup>4</sup> <sub>7</sub>   | 9                             | <sup>1 2 3</sup> <sub>5</sub>   | 8                               | <sup>2</sup> <sub>4 7</sub> <sup>3</sup> |
| <sup>1</sup> <sub>4 7</sub>   | <sup>1 2 3</sup> <sub>4 5</sub> | <sup>2 3</sup> <sub>4 7</sub> | <sup>5 6</sup> <sub>7 8</sub> | <sup>4</sup> <sub>7 8</sub> | <sup>4 5 6</sup> <sub>7</sub> | <sup>1 2 3</sup> <sub>5</sub>   | 9                               | <sup>2</sup> <sub>4 7</sub> <sup>3</sup> |
| 5                             | <sup>1 2</sup> <sub>9</sub>     | 8                             | 4                             | <sup>2</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>6</sub>   | <sup>2 3</sup> <sub>6 9 7</sub> | <sup>1 2 3</sup> <sub>7</sub>   | <sup>2</sup> <sub>6 9</sub> <sup>3</sup> |
| <sup>1</sup> <sub>4 9</sub>   | 7                               | <sup>2</sup> <sub>4 6 9</sub> | 3                             | 5                           | 8                             | <sup>2</sup> <sub>6 4 9</sub>   | <sup>1 2</sup> <sub>4</sub>     | <sup>2</sup> <sub>4 6 9</sub>            |
| 3                             | <sup>1 2</sup> <sub>4 9</sub>   | <sup>2</sup> <sub>4 6 9</sub> | <sup>1</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>6 7</sub> | 8                               | <sup>1 2</sup> <sub>4 7</sub>   | 5  |
| 6                             | <sup>4</sup> <sub>8 9</sub>     | 1                             | <sup>5</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>8 9</sub> | <sup>2</sup> <sub>4 5</sub>   | 7                               | <sup>2 3</sup> <sub>5 8 9</sub> | <sup>2 3</sup> <sub>8 9</sub>            |
| 2                             | <sup>4</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>7 9</sub>   | <sup>5</sup> <sub>7 8 9</sub> | 6                           | <sup>4 5</sup> <sub>7</sub>   | <sup>5</sup> <sub>9</sub>       | <sup>3</sup> <sub>5 9</sub>     | 1  |
| <sup>7 8 9</sup>              | <sup>8 9</sup>                  | 5                             | <sup>7 8 9</sup>              | 3                           | <sup>1 2</sup> <sub>7</sub>   | 4                               | 6                               | <sup>2</sup> <sub>8 9</sub>              |

|                                 |  |                                 |                             |                                   |                                 |                                   |                                   |                             |
|---------------------------------|--|---------------------------------|-----------------------------|-----------------------------------|---------------------------------|-----------------------------------|-----------------------------------|-----------------------------|
| <sup>2</sup> <sub>8</sub>       | <sup>3</sup> <sub>7</sub>              | <sup>2</sup> <sub>8</sub>       | <sup>5</sup> <sub>9</sub>   | 4                                 | <sup>5</sup> <sub>9 7</sub>     | <sup>3</sup> <sub>7</sub>         | 6                                 | 1                           |
| 1                               | 5                                      | 4                               | <sup>7 8</sup> <sub>7</sub> | <sup>3 6</sup> <sub>7 8</sub>     | <sup>3 6</sup> <sub>7 8</sub>   | <sup>2 3</sup> <sub>7</sub>       | <sup>2 3</sup> <sub>7</sub>       | 9                           |
| <sup>3</sup> <sub>6 9</sub>     | <sup>3</sup> <sub>7 9</sub>            | <sup>6</sup> <sub>7 9</sub>     | 2                           | <sup>1</sup> <sub>7</sub>         | 1                               | <sup>4 5</sup> <sub>4 5</sub>     | <sup>4 5</sup> <sub>4 5</sub>     | 8                           |
| <sup>4 5 6</sup> <sub>7</sub>   | <sup>1</sup> <sub>7</sub>              | <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>7 8</sub> | 9                                 | <sup>2</sup> <sub>7 8</sub>     | <sup>4 5</sup> <sub>7 8</sub>     | <sup>4 5</sup> <sub>7</sub>       | 3                           |
| <sup>4 5 6</sup> <sub>9</sub>   | 2                                      | <sup>1</sup> <sub>7 9</sub>     | 3                           | <sup>1</sup> <sub>7</sub>         | <sup>6</sup> <sub>7 8</sub>     | <sup>4 5</sup> <sub>7 8 9</sub>   | <sup>4 5</sup> <sub>4 7</sub>     | <sup>4</sup> <sub>6</sub>   |
| <sup>6</sup> <sub>9</sub>       | 8                                      | 3                               | 4                           | 5                                 | <sup>2</sup> <sub>7 6</sub>     | <sup>1 2</sup> <sub>7 9</sub>     | <sup>1 2</sup> <sub>7</sub>       | <sup>2</sup> <sub>6</sub>   |
| <sup>2 3</sup> <sub>4 8 9</sub> | <sup>1</sup> <sub>4</sub> <sup>3</sup> | <sup>1 2</sup> <sub>9 8 9</sub> | <sup>1</sup> <sub>7 9</sub> | <sup>1 2 3</sup> <sub>7</sub>     | <sup>4</sup> <sub>7 9</sub>     | <sup>3 1 2 3</sup> <sub>4 7</sub> | <sup>1 2 3</sup> <sub>4 7</sub>   | 5                           |
| <sup>2 3</sup> <sub>4 5</sub>   | 6                                      | <sup>1 2</sup> <sub>5</sub>     | <sup>1</sup> <sub>7</sub>   | 5                                 | 8                               | <sup>4 5</sup> <sub>7</sub>       | <sup>3 1 2 3</sup> <sub>4 7</sub> | <sup>2</sup> <sub>4 7</sub> |
| 7                               | <sup>1</sup> <sub>4</sub> <sup>3</sup> | <sup>1 2</sup> <sub>5 9</sub>   | 6                           | <sup>1 2 3</sup> <sub>4 5 9</sub> | <sup>3 1 2 3</sup> <sub>4</sub> | <sup>1 2 3</sup> <sub>4</sub>     | 8                                 | <sup>2</sup> <sub>4</sub>   |

|                                 |                                 |                                 |                               |                               |                             |                               |                               |                               |
|---------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|
| 9                               | <sup>2</sup> <sub>4 7</sub>     | <sup>2</sup> <sub>6 4 7</sub>   | 5                             | 1                             | <sup>4</sup> <sub>6</sub>   | 8                             | <sup>4</sup> <sub>7 6</sub>   | 3                             |
| 5                               | <sup>1</sup> <sub>4 7</sub>     | <sup>1</sup> <sub>6 4 7</sub>   | 3                             | <sup>4</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>8 9</sub> | 2                             | <sup>1</sup> <sub>4 6 9</sub> | <sup>1</sup> <sub>4 6 9</sub> |
| <sup>1</sup> <sub>4 6</sub>     | 3                               | 8                               | 7                             | <sup>4</sup> <sub>6 9</sub>   | <sup>2</sup> <sub>9</sub>   | 5                             | <sup>1</sup> <sub>4 6 9</sub> | <sup>1</sup> <sub>4 6 9</sub> |
| 7                               | <sup>1 2</sup> <sub>4</sub>     | <sup>1 2 3</sup> <sub>4</sub>   | <sup>2</sup> <sub>4 6 9</sub> | <sup>2</sup> <sub>4 6 9</sub> | <sup>1 3</sup> <sub>9</sub> | 5                             | <sup>2</sup> <sub>4 6</sub>   | 8                             |
| 8                               | 9                               | 6                               | <sup>2</sup> <sub>4</sub>     | 5                             | 7                           | 3                             | <sup>1</sup> <sub>4</sub>     | <sup>2</sup> <sub>4</sub>     |
| <sup>1 2</sup> <sub>4</sub>     | 5                               | <sup>1 2 3</sup> <sub>4</sub>   | 8                             | <sup>2</sup> <sub>4 6</sub>   | <sup>1 3</sup> <sub>9</sub> | <sup>4</sup> <sub>7</sub>     | 9                             | <sup>2</sup> <sub>4 6 7</sub> |
| 3                               | <sup>1 2</sup> <sub>4 8</sub>   | 5                               | <sup>2</sup> <sub>4 9</sub>   | 7                             | <sup>4</sup> <sub>8 9</sub> | 6                             | <sup>2</sup> <sub>4</sub>     | <sup>1 2</sup> <sub>4 9</sub> |
| <sup>2</sup> <sub>4 6</sub>     | <sup>2</sup> <sub>4 7 8</sub>   | <sup>2</sup> <sub>4 7 9</sub>   | 1                             | <sup>2</sup> <sub>4 8 9</sub> | 5                           | <sup>4</sup> <sub>7 9</sub>   | 3                             | <sup>2</sup> <sub>4 7 9</sub> |
| <sup>1 2</sup> <sub>4 6 7</sub> | <sup>1 2</sup> <sub>4 6 7</sub> | <sup>1 2</sup> <sub>4 7 9</sub> | <sup>2</sup> <sub>4 6 9</sub> | 3                             | <sup>4</sup> <sub>6 9</sub> | <sup>1</sup> <sub>4 7 9</sub> | 8                             | 5                             |

|            |            |              |          |            |              |            |              |            |            |
|------------|------------|--------------|----------|------------|--------------|------------|--------------|------------|------------|
| 1 2<br>7   | 5<br>7     | 1 2<br>7     | 4<br>7   | 8 9<br>7   | 8 9<br>7     | 3<br>7     | 3 1 2<br>9 7 | 1 2<br>6 7 | 1 2<br>6 7 |
| 8<br>4 7   | 6<br>7     | 3<br>4 7     | 2<br>7   | 2 6<br>7 9 | 1<br>7       | 4 5<br>9 7 | 2 4<br>5 7   | 4<br>7     | 2<br>7     |
| 9<br>1 4   | 6<br>7     | 1 2<br>4 7   | 5<br>7   | 2 6<br>7   | 3<br>7       | 1 3<br>4   | 8<br>4       | 1 2<br>4   | 7          |
| 1 2<br>4 5 | 4<br>7     | 6<br>7       | 7 8      | 3<br>7 8   | 4<br>7 8     | 9<br>4     | 1 2<br>4 5   | 9<br>4     | 1 2<br>7 8 |
| 3<br>4 5   | 9<br>7 8   | 1 2<br>4 7   | 6<br>7 8 | 5<br>7 8   | 4<br>7 8     | 1<br>4     | 1 2<br>4 7   | 1 2<br>4   | 7 8        |
| 4 5<br>7   | 4<br>7 8   | 4 5<br>7 8   | 9<br>7 8 | 1<br>7 8   | 2<br>7 8     | 6<br>7     | 4 5<br>7     | 3<br>7     | 4 6<br>9   |
| 4 5<br>7   | 2<br>7 8   | 4 5<br>8 9   | 1<br>7 8 | 6<br>8 9   | 5 6<br>8 9   | 7<br>7 8   | 3<br>7 8     | 4<br>7 8   | 6<br>9     |
| 6<br>1 4   | 3<br>7     | 1 4<br>7 9   | 2 3<br>7 | 2<br>7 9   | 7<br>7 9     | 8<br>4     | 1<br>4       | 5<br>7     | 6<br>9     |
| 1 5<br>7   | 1 3<br>7 8 | 1 5<br>7 8 9 | 3<br>7 8 | 4<br>7 8 9 | 5 6<br>7 8 9 | 2<br>7 8   | 1 6<br>7 8   | 1<br>7 8   | 6<br>9     |

|              |            |              |            |            |              |            |          |            |          |
|--------------|------------|--------------|------------|------------|--------------|------------|----------|------------|----------|
| 2<br>7 9     | 3<br>7 9   | 2 5<br>7 9   | 4<br>7     | 2 5 6<br>7 | 2 5 6<br>7   | 2 6<br>9   | 8<br>7   | 1<br>7     | 6<br>9   |
| 8<br>1 2     | 2<br>4 7   | 2<br>4 7     | 2<br>7     | 9<br>1 2   | 6<br>7       | 3<br>7     | 2 6<br>7 | 5<br>7     | 6<br>9   |
| 1 2<br>7 9   | 6<br>7 9   | 2 5<br>7 9   | 3<br>7     | 1 2<br>5 7 | 8<br>7       | 4<br>7     | 2<br>7   | 2<br>9     | 6<br>9   |
| 5<br>4 7     | 2 3<br>7 9 | 4 2 3<br>7 9 | 2<br>8     | 2 4<br>6 8 | 2 3 6<br>7   | 2 6<br>8 9 | 1<br>7   | 2 6<br>7 9 | 2 6<br>9 |
| 2 3<br>7     | 2<br>7     | 1<br>7       | 9<br>7     | 2 5 6<br>8 | 2 3 5 6<br>7 | 2 6<br>8   | 4<br>7   | 2 6<br>7   | 2 6<br>9 |
| 4 2<br>6 9   | 8<br>4 6   | 2 6<br>9     | 1<br>4     | 2 4<br>6   | 7<br>7       | 2 6<br>9   | 5<br>7   | 3<br>7     | 6<br>9   |
| 1 2<br>4 6   | 1 2<br>4 7 | 8<br>7 9     | 2 5<br>7   | 3<br>7     | 1 2<br>9     | 1 5<br>7   | 2 6<br>4 | 2 6<br>4   | 6<br>9   |
| 1 2<br>4     | 5<br>4 9   | 2 4<br>9     | 6<br>8     | 1 2<br>9   | 1 2<br>9     | 7<br>7     | 3<br>4 8 | 2 4<br>8   | 2 6<br>9 |
| 1 2 3<br>7 6 | 1 2<br>7   | 2 3<br>7     | 2 5<br>7 8 | 1 2<br>7 8 | 4<br>7       | 1 5<br>7   | 9<br>7   | 2 6<br>8   | 2 6<br>9 |

|              |            |              |            |                |                |            |                |            |            |
|--------------|------------|--------------|------------|----------------|----------------|------------|----------------|------------|------------|
| 1 2<br>5 8   | 4 5<br>8 9 | 3<br>8 9     | 4 2<br>7 9 | 4 2<br>8 9     | 4 2<br>8 9     | 6<br>4 8   | 2 1<br>4 5     | 1 6<br>7 8 | 3 6<br>7 8 |
| 2 5<br>8     | 4 5 6<br>8 | 4 5 6<br>8   | 4 2<br>6 7 | 3 2<br>6 8     | 1<br>7         | 4 5<br>7 8 | 9<br>7 8       | 4 5<br>7 8 | 3 6<br>7 8 |
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| 1 5 3<br>8 9 | 5 6<br>8 9 | 3 1 5 6<br>7 | 2 1<br>4 9 | 4 5<br>9       | 4 5 6<br>7 8 9 | 4 6<br>8   | 4 5 6<br>7 8 9 | 3 6<br>7 8 | 3 6<br>7 8 |
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|              |            |            |                |              |                |                |                |                |              |
|--------------|------------|------------|----------------|--------------|----------------|----------------|----------------|----------------|--------------|
| 1 5 6<br>9   | 2 5 6<br>7 | 1 2 5<br>9 | 4 7 8          | 3 5 6<br>7   | 1 6<br>7       | 1 6<br>7       | 5 6<br>7       | 1 6<br>7       | 6 9<br>8     |
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| 5 3<br>8 9   | 1 4<br>8 9 | 4 3<br>9 7 | 3 6<br>9 7     | 6 5 6<br>9 7 | 2 7 8 9<br>6   | 5 6<br>7 8 9   | 2 7 8 9<br>6   | 3 6<br>7 8 9   | 3 6<br>7 8 9 |
| 1 4 5 6<br>8 | 9 3<br>7   | 1 5<br>4 8 | 1 4 5<br>7     | 6 4 6<br>7 8 | 6 4 6<br>7 8   | 2 3 6<br>7 8   | 1 4 6<br>7 8   | 3 6<br>7 8     | 3 6<br>7 8   |
| 7 4 5 6<br>8 | 5 8<br>7   | 5 3<br>9   | 2 4 5<br>9     | 6 1<br>8 9   | 1 4 6<br>7 8   | 1 4 6<br>7 8   | 3 6<br>7 8     | 3 6<br>7 8     | 3 6<br>7 8   |
| 1 4<br>8     | 2 4<br>8   | 1 2<br>8   | 6 1 3<br>4 8 9 | 7 9<br>7     | 3 4<br>7 8     | 5 6<br>7 8     | 1 3<br>7 8     | 5 6<br>7 8     | 6 9<br>8     |

|            |            |            |          |            |            |              |              |              |            |
|------------|------------|------------|----------|------------|------------|--------------|--------------|--------------|------------|
| 9<br>7 5   | 4 5<br>7   | 1<br>7     | 6<br>5 3 | 4 5<br>8 7 | 3 4<br>7 8 | 3 7 8<br>7 8 | 2<br>1 3     | 1 3<br>7 9   | 3 6<br>7 8 |
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| 1 3<br>4 6 | 2 3<br>4 6 | 4 9<br>7   | 8 7<br>4 | 2 3<br>4 6 | 1 3<br>4   | 5 1<br>4     | 3 9<br>7     | 1 3<br>4     | 3 6<br>7 8 |
| 4 5<br>7   | 4 5<br>7 9 | 4 7<br>9   | 2 1<br>8 | 1 6<br>8   | 1 6<br>8   | 3 4<br>7 8   | 3 4<br>7 8   | 1 3<br>4     | 3 6<br>7 8 |
| 2<br>4 7   | 1 3<br>4   | 8<br>7     | 9 4<br>7 | 3 4<br>7   | 3 4<br>7   | 6 5<br>4 7   | 5<br>4 7     | 1 3<br>4     | 3 6<br>7 8 |
| 4 3<br>7   | 4 3<br>7   | 6<br>7     | 4 1<br>7 | 3 8<br>7   | 5 9<br>8   | 2 1<br>8     | 3 6<br>7 8   | 1 3<br>4     | 3 6<br>7 8 |

|            |            |              |              |              |              |              |              |              |            |
|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|
| 1 5 6<br>8 | 4 5 6<br>7 | 2 9<br>4 5   | 7 3<br>4 6   | 2 4<br>8     | 1 3<br>4     | 2 4<br>8     | 1 3<br>4     | 2 4<br>8     | 6 9<br>8   |
| 8 6<br>7   | 6 8 9<br>7 | 2 4<br>6     | 7 3<br>4     | 1 2<br>5 6   | 1 2<br>4 5   | 2 4<br>6     | 2 4<br>6     | 2 4<br>6     | 6 9<br>8   |
| 2 5 6<br>7 | 1 5 6<br>7 | 3 4 5 6<br>9 | 2 1 2<br>5 6 | 7 8<br>4 5   | 1 2 3<br>4 5 | 1 2 3<br>4 5 | 1 2 3<br>4 5 | 1 2 3<br>4 5 | 3 6<br>7 8 |
| 9 7<br>4 5 | 1 5 6<br>7 | 2 4 5 6<br>9 | 1 2 5 6<br>8 | 1 2 5 6<br>8 | 1 2 5 6<br>8 | 1 2 3<br>4 5 | 1 2 3<br>4 5 | 1 2 3<br>4 5 | 3 6<br>7 8 |
| 2 5<br>7   | 4 8<br>7   | 2 3 5<br>9   | 1 2 3<br>5   | 1 2 3<br>5   | 1 2 3<br>5   | 6 1<br>9     | 7 1<br>9     | 2 3<br>4 5   | 3 6<br>7 8 |
| 4 5<br>8   | 2 7<br>8   | 5 3<br>9     | 5 3<br>8     | 5 8<br>9     | 4 5 6<br>7 8 | 1 3<br>4     | 1 3<br>4     | 1 3<br>4     | 3 6<br>7 8 |
| 5 6<br>8   | 5 6<br>8   | 5 6<br>8     | 1 4<br>8     | 2 5<br>8     | 2 3<br>5     | 7 9<br>8     | 9 2<br>8     | 2 3<br>4 5   | 3 6<br>7 8 |
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|                            |                        |                          |                          |                            |                            |                            |                          |                        |
|----------------------------|------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------------|------------------------|
| <sup>3</sup><br>4 5 6<br>7 | 9                      | <sup>2</sup><br>4 6<br>7 | <sup>3</sup><br>5 6<br>7 | <sup>3</sup><br>5<br>7     | 1                          | <sup>2</sup><br>5 6<br>8   | <sup>2</sup><br>4<br>8   | <sup>3</sup><br>8      |
| <sup>3</sup><br>5 6<br>7   | 8                      | <sup>2</sup><br>6<br>7   | <sup>3</sup><br>5 6<br>7 | 4                          | <sup>6</sup><br>9          | <sup>1</sup><br>2 5 6<br>9 | <sup>2</sup><br>1<br>9   | <sup>3</sup><br>3<br>9 |
| <sup>3</sup><br>4 5 6      | 1                      | 4 6                      | 8                        | <sup>3</sup><br>5<br>9     | 2                          | 5 6 4                      | 9                        | 7                      |
| <sup>1</sup><br>4          | 4 5                    | 3                        | <sup>2</sup><br>5<br>9   | <sup>1</sup><br>2 5<br>8 9 | 7                          | <sup>2</sup><br>8          | 6                        | <sup>8</sup><br>9      |
| <sup>1</sup><br>7          | 6                      | <sup>5</sup><br>6<br>7   | <sup>1</sup><br>6<br>7   | <sup>2</sup><br>5<br>9     | <sup>1</sup><br>2 5<br>8 9 | <sup>3</sup><br>8 9        | <sup>2</sup><br>4<br>8 9 | 4                      |
| <sup>8</sup><br>9          | 2                      | <sup>8</sup><br>9        | 4                        | 6                          | 3                          | 7                          | 1                        | 5                      |
| <sup>4</sup><br>7 8 9      | <sup>4</sup><br>6<br>7 | 5                        | 1                        | <sup>7</sup><br>8 9        | <sup>4</sup><br>6<br>8 9   | <sup>4</sup><br>8          | 3                        | 2                      |
| <sup>1</sup><br>4          | 4                      | <sup>3</sup><br>4<br>8 9 | <sup>2</sup><br>3<br>9   | <sup>2</sup><br>3<br>8 9   | 5                          | <sup>1</sup><br>4<br>8     | 7                        | 6                      |
| 2                          | <sup>4</sup><br>6<br>7 | <sup>3</sup><br>1<br>8   | <sup>4</sup><br>6<br>7 8 | <sup>3</sup><br>6<br>7 8   | <sup>3</sup><br>4<br>8     | 9                          | 5                        | <sup>1</sup><br>8      |

|                            |                        |                        |                        |                          |                        |                            |                          |                        |
|----------------------------|------------------------|------------------------|------------------------|--------------------------|------------------------|----------------------------|--------------------------|------------------------|
| <sup>1</sup><br>2 5<br>8 9 | 6                      | 3                      | 4                      | 7                        | <sup>5</sup><br>9      | <sup>1</sup><br>2 8<br>9   | <sup>2</sup><br>1<br>8   | 1                      |
| <sup>1</sup><br>5<br>9     | <sup>1</sup><br>5<br>7 | 4                      | 2                      | 8                        | <sup>5</sup><br>9      | <sup>1</sup><br>6<br>9     | <sup>3</sup><br>1<br>7   | <sup>3</sup><br>6<br>7 |
| 2                          | 2                      | 2                      | 6                      | 3                        | 1                      | <sup>4</sup><br>8 9        | <sup>2</sup><br>4<br>7 8 | 5                      |
| <sup>1</sup><br>2 6<br>9   | <sup>1</sup><br>2<br>9 | 5                      | <sup>7</sup><br>8      | 4                        | <sup>6</sup><br>7 8    | 3                          | 9                        | <sup>1</sup><br>6<br>8 |
| <sup>1</sup><br>6<br>9     | <sup>3</sup><br>4<br>9 | 7                      | 9                      | <sup>1</sup><br>5 6<br>8 | <sup>3</sup><br>6<br>8 | <sup>1</sup><br>4 5 6<br>8 | <sup>4</sup><br>5 6<br>8 | 2                      |
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| <sup>5</sup><br>9          | <sup>5</sup><br>9      | 6                      | <sup>7</sup><br>8      | 2                        | <sup>4</sup><br>7 8    | <sup>4</sup><br>8          | 1                        | 9                      |
| 4                          | 8                      | <sup>1</sup><br>2<br>9 | <sup>1</sup><br>3<br>9 | <sup>1</sup><br>6<br>9   | <sup>3</sup><br>6      | <sup>2</sup><br>5 6<br>7   | <sup>5</sup><br>6<br>7   | <sup>6</sup><br>7      |
| 7                          | 2                      | <sup>1</sup><br>2<br>9 | 5                      | <sup>1</sup><br>6<br>9   | <sup>4</sup><br>8      | <sup>2</sup><br>6<br>8     | <sup>2</sup><br>3<br>8   | <sup>3</sup><br>6<br>8 |

|                   |                   |                          |                          |                            |                            |                            |                            |                            |
|-------------------|-------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 5                 | 4                 | 7                        | <sup>1</sup><br>2 6<br>8 | <sup>1</sup><br>6<br>8     | 9                          | <sup>1</sup><br>2 6<br>8   | <sup>2</sup><br>6<br>8     | 3                          |
| <sup>1</sup><br>2 | <sup>2</sup><br>3 | <sup>1</sup><br>2 3      | 5                        | <sup>4</sup><br>6<br>8     | 7                          | 9                          | <sup>4</sup><br>6<br>8     | <sup>4</sup><br>6          |
| 9                 | 6                 | 8                        | 3                        | <sup>1</sup><br>4          | <sup>1</sup><br>2<br>4     | <sup>1</sup><br>2<br>4 5   | <sup>2</sup><br>4 5        | 7                          |
| 7                 | 9                 | <sup>1</sup><br>2 6<br>9 | <sup>1</sup><br>6<br>8   | 3                          | <sup>1</sup><br>4 5 6<br>8 | <sup>4</sup><br>5 6<br>8   | <sup>4</sup><br>5 6<br>8   | <sup>4</sup><br>5 6        |
| <sup>1</sup><br>4 | 6                 | 8                        | 5                        | <sup>1</sup><br>6<br>7     | <sup>1</sup><br>4<br>6     | <sup>4</sup><br>6<br>7     | 3                          | 9                          |
| <sup>2</sup><br>4 | <sup>2</sup><br>3 | <sup>2</sup><br>3        | 9                        | <sup>4</sup><br>5 6<br>7 8 | <sup>4</sup><br>5 6<br>8   | <sup>4</sup><br>5 6<br>7 8 | 1                          | <sup>2</sup><br>4 5 6      |
| <sup>2</sup><br>8 | 5                 | 4                        | <sup>1</sup><br>6<br>7 8 | <sup>1</sup><br>6<br>7 8 9 | 3                          | <sup>2</sup><br>6<br>7     | <sup>2</sup><br>6<br>9     | <sup>1</sup><br>2<br>6     |
| 3                 | 1                 | 9                        | 4                        | <sup>5</sup><br>6<br>7     | <sup>2</sup><br>5 6        | <sup>2</sup><br>5 6<br>7   | <sup>2</sup><br>5 6        | 8                          |
| <sup>2</sup><br>8 | 7                 | <sup>2</sup><br>6        | <sup>1</sup><br>2 6<br>8 | <sup>1</sup><br>5 6<br>8 9 | <sup>1</sup><br>2 5 6<br>8 | 3                          | <sup>2</sup><br>4 5 6<br>9 | <sup>1</sup><br>2<br>4 5 6 |

|                          |                               |                   |                                |                       |                              |                       |                          |                         |
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| <sup>1</sup><br>6<br>7 8 | <sup>1</sup><br>3<br>6<br>7 8 | 2                 | <sup>1</sup><br>5<br>7 8 9     | <sup>5</sup><br>8 9   | <sup>1</sup><br>7 8 9        | 4                     | <sup>1</sup><br>3<br>7   | <sup>5</sup><br>9       |
| 9                        | <sup>1</sup><br>4<br>7        | 5                 | 6                              | 3                     | <sup>1</sup><br>2 4<br>7     | 8                     | <sup>1</sup><br>2<br>7   | <sup>1</sup><br>2<br>7  |
| <sup>1</sup><br>4        | <sup>1</sup><br>3<br>4 7 8    | <sup>3</sup><br>7 | <sup>1</sup><br>2 4 5<br>7 8 9 | <sup>4</sup><br>5 8 9 | <sup>1</sup><br>2 4<br>7 8 9 | <sup>5</sup><br>9     | <sup>1</sup><br>2 3<br>7 | 6                       |
| <sup>1</sup><br>2 4 5    | <sup>3</sup><br>7 9           | <sup>3</sup><br>7 | <sup>2</sup><br>4 8 9          | 6                     | <sup>2</sup><br>4 8 9        | <sup>2</sup><br>3 5   | <sup>1</sup><br>2 7 8    | <sup>1</sup><br>2 3 4 5 |
| <sup>1</sup><br>2 4 5 6  | <sup>1</sup><br>4 6 7         | <sup>1</sup><br>4 | <sup>2</sup><br>4 8            | 7                     | 3                            | <sup>2</sup><br>5 6   | 9                        | <sup>1</sup><br>2 4 5 8 |
| <sup>2</sup><br>4 6      | <sup>3</sup><br>7 9           | 8                 | <sup>2</sup><br>4 9            | 1                     | 5                            | <sup>2</sup><br>6 7   | <sup>2</sup><br>6 4      | <sup>2</sup><br>3 7     |
| 7                        | <sup>1</sup><br>2 4           | 6                 | 3                              | <sup>4</sup><br>8 9   | <sup>1</sup><br>4 8 9        | <sup>2</sup><br>9     | 5                        | <sup>2</sup><br>8 9     |
| 8                        | <sup>1</sup><br>2 5           | <sup>1</sup><br>9 | <sup>1</sup><br>5 7            | <sup>5</sup><br>9     | <sup>1</sup><br>6 7 9        | <sup>2</sup><br>6 7 9 | <sup>2</sup><br>3 7 9    | 4                       |
| 3                        | <sup>4</sup><br>5 9           | 4                 | <sup>4</sup><br>5 7 8 9        | 2                     | <sup>4</sup><br>6 7 8 9      | 1                     | <sup>6</sup><br>7 8 9    | <sup>6</sup><br>7 8 9   |

|                       |                          |                          |                   |                   |                   |                          |                   |                     |
|-----------------------|--------------------------|--------------------------|-------------------|-------------------|-------------------|--------------------------|-------------------|---------------------|
| <sup>4</sup><br>5 8 9 | <sup>4</sup><br>5<br>8 9 | <sup>3</sup><br>6<br>8 9 | 7                 | <sup>2</sup><br>4 | <sup>1</sup><br>9 | <sup>2</sup><br>6<br>9   | <sup>1</sup><br>5 | <sup>1</sup><br>2 3 |
| 1                     | 2                        | <sup>7</sup><br>9        | 6                 | 3                 | 5                 | <sup>7</sup><br>9        | 8                 | 4                   |
| <sup>4</sup><br>5 9   | <sup>4</sup><br>5<br>7   | <sup>3</sup><br>6<br>7 9 | <sup>2</sup><br>4 | 8                 | <sup>1</sup><br>9 | <sup>2</sup><br>6<br>7 9 | <sup>1</sup><br>5 | <sup>1</sup><br>2 3 |
| <sup>2</sup><br>8     | 9                        | 4                        | 5                 | 6                 | 3                 | <sup>2</sup><br>7        | <sup>1</sup><br>7 | <sup>1</sup><br>2 8 |
| 3                     | 1                        | 5                        | 8                 | 7                 | 2                 | 4                        | 9                 | 6                   |
| 7                     | 6                        | <sup>2</sup><br>8        | 9                 | 1                 | 4                 | 5                        | 3                 | <sup>2</sup><br>8   |
| <sup>2</sup><br>4 5   | <sup>4</sup><br>5<br>7   | <sup>2</sup><br>7        | 3                 | <sup>2</sup><br>4 | 8                 | 1                        | 6                 | 9                   |
| 6                     | 8                        | 1                        | <sup>4</sup><br>2 | 9                 | 7                 | 3                        | <sup>4</sup><br>2 | 5                   |
| <sup>2</sup><br>4     | <sup>4</sup><br>9        | <sup>3</sup><br>9        | 1                 | 5                 | 6                 | 8                        | <sup>2</sup><br>4 | 7                   |

|                          |                          |                          |                         |                       |                              |                        |                            |                          |
|--------------------------|--------------------------|--------------------------|-------------------------|-----------------------|------------------------------|------------------------|----------------------------|--------------------------|
| <sup>4</sup><br>6<br>9   | <sup>5</sup><br>6<br>9   | <sup>4</sup><br>5 6<br>9 | <sup>4</sup><br>6<br>7  | 8                     | <sup>1</sup><br>3<br>4 6 7 9 | <sup>1</sup><br>6<br>9 | <sup>1</sup><br>3<br>4 5 9 | 2                        |
| <sup>4</sup><br>6<br>8 9 | 7                        | <sup>4</sup><br>5 6<br>8 | <sup>3</sup><br>6       | 2                     | <sup>1</sup><br>3<br>4 6 9   | <sup>1</sup><br>6<br>9 | <sup>1</sup><br>3<br>4 5 9 | <sup>1</sup><br>4 5 6    |
| 1                        | 3                        | 2                        | 5                       | <sup>4</sup><br>9     | <sup>4</sup><br>6<br>9       | 7                      | <sup>4</sup><br>8 9        | <sup>4</sup><br>6<br>8   |
| <sup>6</sup><br>7 8 9    | <sup>6</sup><br>8 9      | <sup>3</sup><br>8        | 1                       | <sup>4</sup><br>7     | <sup>3</sup><br>2            | 5                      | <sup>4</sup><br>7 8 9      | <sup>4</sup><br>6<br>7 8 |
| <sup>2</sup><br>7 8 9    | 4                        | <sup>1</sup><br>8        | <sup>3</sup><br>6       | 6                     | 5                            | <sup>1</sup><br>2 8 9  | <sup>1</sup><br>2 7 8      | <sup>1</sup><br>7 8      |
| 5                        | <sup>2</sup><br>8        | <sup>1</sup><br>8        | 9                       | <sup>4</sup><br>7     | <sup>4</sup><br>7 8          | <sup>1</sup><br>2 8    | <sup>1</sup><br>2 7 8      | 3                        |
| <sup>2</sup><br>4 6 8    | <sup>2</sup><br>5 6<br>8 | <sup>4</sup><br>5 6<br>8 | <sup>2</sup><br>4 6 7 8 | <sup>1</sup><br>4 7   | <sup>4</sup><br>6 7 8        | 3                      | <sup>1</sup><br>2 7 8      | 9                        |
| <sup>2</sup><br>3 8      | <sup>1</sup><br>9        | <sup>2</sup><br>6        | 5                       | <sup>3</sup><br>6     | 4                            | 2                      | <sup>7</sup><br>8          |                          |
| <sup>2</sup><br>3 4 8    | <sup>2</sup><br>5 9      | 7                        | <sup>2</sup><br>3 4 8   | <sup>1</sup><br>3 4 9 | <sup>3</sup><br>4 8 9        | <sup>1</sup><br>2 8    | <sup>1</sup><br>5 8        |                          |

|          |            |          |            |            |            |            |            |
|----------|------------|----------|------------|------------|------------|------------|------------|
| 1 2<br>8 | 1 2<br>5   | 1 2<br>4 | 2 3<br>6   | 5<br>8 9   | 4 5<br>8 9 | 5 3<br>8 9 | 7          |
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| 2 6<br>8 | 2 5 6<br>4 | 2        | 7          | 2 3        | 5<br>8 9   | 4 5<br>8 9 | 5 3<br>8 9 |
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| 1 2<br>7 | 6 9        | 1 2<br>7 | 1 2<br>8   | 1 2<br>5 8 | 3          | 5 6<br>7 8 | 4 5 6<br>8 |
| 4 6<br>7 | 3 6<br>8   | 8        | 4          | 4 5<br>9   | 5 6<br>9   | 5 6<br>7 9 | 1 2        |
| 1 2<br>4 | 1 2<br>6   | 5        | 1 2<br>4   | 7 8 9      | 3          | 6<br>8 9   | 6<br>8 9   |

|            |              |            |              |            |              |            |            |          |
|------------|--------------|------------|--------------|------------|--------------|------------|------------|----------|
| 8          | 2 3<br>5 6   | 2 3<br>6   | 9            | 2 5 6<br>7 | 4            | 2 3<br>7   | 2 6<br>7   | 1        |
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| 1 2<br>5   | 1 2<br>5 6   | 4          | 3            | 8          | 2 5 6<br>7   | 9          | 2 6<br>7   | 5 6      |
| 1 3<br>7   | 1 3<br>8 9   | 3          | 1 6<br>7     | 4          | 1 3<br>7 8 9 | 5          | 1 9<br>7   | 2        |
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| 1 2 3<br>4 | 1 2 3<br>4   | 5          | 1 7          | 3 7        | 1 3<br>7 8 9 | 6          | 1 4<br>7 9 | 4 7      |
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| 2 3<br>4   | 2 3<br>4 6   | 2 3<br>7 8 | 4 6<br>7     | 1          | 2 3<br>6 7   | 4 2<br>7   | 5          | 9        |
| 2<br>4 5   | 2<br>4 5 6   | 1          | 8            | 9          | 2 5 6<br>7   | 2 4<br>7   | 3          | 4 6<br>7 |

|          |            |              |                |              |              |              |          |
|----------|------------|--------------|----------------|--------------|--------------|--------------|----------|
| 9        | 3          | 5 6<br>7     | 2 4 5 6<br>4 7 | 2 6<br>8     | 4 5<br>7     | 1 7          | 2 6      |
| 4        | 2          | 1 5 6<br>7 8 | 1 3<br>5 6     | 1 3<br>6     | 3 5<br>7 8   | 5 6<br>7 9   | 3 6<br>9 |
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| 3 1<br>6 | 1 3<br>4 6 | 7            | 5 4<br>8       | 3 4<br>9     | 2 1 2<br>4 9 | 1 2<br>9     |          |
| 5        | 4 5        | 2            | 4 6 4<br>9     | 1            | 4 5<br>7 9   | 3 8          |          |
| 1        | 7          | 4            | 5 3<br>8       | 3 5<br>8 9   | 2 6<br>9     | 3 6<br>9     |          |
| 2        | 6<br>9     | 3 1<br>6     | 1 3<br>4       | 1 3<br>4 7   | 3 1 3<br>7 9 | 8 5          |          |
| 5 3<br>8 | 5 8 9      | 5 8          | 1 2 3<br>7     | 1 2 3<br>9   | 6 1 3<br>7 9 | 4            |          |

|            |          |          |              |            |              |            |            |
|------------|----------|----------|--------------|------------|--------------|------------|------------|
| 1 5<br>8 9 | 2        | 3        | 5 8 9        | 4          | 8 9          | 6 1<br>8 9 | 7          |
| 5 8 9      | 6        | 4 5      | 2 5<br>7 8 9 | 2 3<br>5 7 | 1 8 9        | 2 8 9      |            |
| 1 8 9      | 7        | 1 4      | 6            | 2 3<br>8   | 2 3<br>8 9   | 4 3<br>8   | 5 1 2<br>8 |
| 2 1<br>7   | 5 6      | 6        | 3 1<br>7 8   | 5 4<br>7   | 9 1<br>7 8   | 1 8        | 1          |
| 4          | 9        | 8        | 1 2<br>7     | 1 2<br>7   | 2 6<br>7     | 5 6<br>7   | 3          |
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| 3          | 4        | 1 7      | 1 7 8        | 6 5<br>7 8 | 2 7 8        | 2 9        |            |
| 1 5 6<br>7 | 1 5<br>8 | 9        | 4 7 8        | 1 2<br>7 8 | 2 7 8        | 1 3<br>7 8 | 5 6        |
| 1 5 6<br>7 | 1 5<br>8 | 2        | 1 7 8 9      | 1 3<br>7 8 | 3 1<br>7 8 9 | 4 5 6      |            |

|            |            |          |              |            |            |              |            |
|------------|------------|----------|--------------|------------|------------|--------------|------------|
| 1 8        | 2 1<br>6   | 7        | 1 3<br>8     | 1 4 5      | 4 5 6<br>8 | 9            | 5 6        |
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| 1 7 8 9    | 3 7 8      | 5        | 1 2 3<br>8 9 | 6 1 4<br>9 | 2 3<br>4 8 | 2 3<br>8     | 2 3        |
| 1 2<br>4 5 | 4 5 6<br>8 | 9        | 1 2<br>4     | 7 3        | 2 5 6<br>8 | 2 5 6<br>8   | 2 5 6      |
| 3          | 4 7 8      | 2 7 8    | 4 8 9        | 5 6        | 7 8 9      | 1 7 9        |            |
| 1 2<br>5   | 5 6<br>7 8 | 6        | 1 2<br>8 9   | 1 2<br>8 9 | 1 2 3<br>9 | 4 5 6<br>7 9 |            |
| 2 4 5      | 1 2 3      | 2 3      | 5 6 4<br>9   | 3 7        | 2 3<br>5 6 | 2 3<br>5 6   | 8          |
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| 5 7 8      | 9 7 8      | 3 7 8    | 1 3<br>5 6   | 1 3        | 2 1 3<br>7 | 3 5 6        | 4          |

|            |              |              |              |              |              |              |     |
|------------|--------------|--------------|--------------|--------------|--------------|--------------|-----|
| 2 4 5<br>9 | 1 4 5<br>9   | 2 4<br>7     | 2 4<br>9     | 6 3<br>4 7 8 | 4 5 6<br>7 8 | 1            |     |
| 2 4 6<br>9 | 2 6 4<br>9   | 6 4 6<br>9   | 2 6 4 6<br>7 | 3 4 5<br>7 8 | 4 5<br>7 8   | 1            |     |
| 8          | 2 3<br>6 4   | 3 6 4 6<br>7 | 2 6<br>7     | 1 5          | 4 2<br>7     | 2 4<br>7     | 9   |
| 2 5<br>9   | 2 5<br>9     | 1            | 4 8          | 7            | 2 9          | 6 8          | 3   |
| 2 3<br>6   | 4 7          | 3 6<br>9     | 5 8 6<br>9   | 2 6          | 7 8 9        | 1 7 8        | 3   |
| 2 3<br>6   | 8 7          | 3 6<br>7     | 2 3<br>6     | 9 1          | 4 7          | 2 4<br>7     | 5   |
| 1 5 6<br>9 | 3 4 5 6<br>9 | 3 6<br>9     | 3 6<br>9     | 2 8          | 4 5<br>7     | 4 5<br>7 9   | 4 6 |
| 7          | 3 6<br>9     | 8            | 3 6<br>9     | 5 4 6<br>9   | 1 4 9        | 2            |     |
| 4 5 6<br>9 | 3 5 6<br>9   | 2 1          | 3 4 6 4<br>7 | 6 4 6 4<br>9 | 4 5<br>7 8   | 4 5<br>7 8 9 | 4 6 |

|        |                  |                       |                       |                  |             |             |                  |                  |        |
|--------|------------------|-----------------------|-----------------------|------------------|-------------|-------------|------------------|------------------|--------|
| 4<br>7 | 4<br>6<br>9      | 8                     | 1<br>4<br>7           | 6<br>6<br>9      | 1<br>4<br>6 | 4<br>6<br>9 | 2<br>5<br>7      | 1<br>2<br>5<br>6 | 3      |
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| 9      | 4<br>5           | 3<br>4                | 2<br>4<br>5<br>6      | 7                | 8           | 1           | 2<br>4<br>5<br>6 | 5<br>6           |        |
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| 4<br>8 | 3<br>4<br>8      | 3<br>4                | 2<br>5                | 9                | 1           | 6           | 7                | 2<br>5           |        |

|                       |                  |                  |                            |                            |                                 |                       |                  |                  |                  |
|-----------------------|------------------|------------------|----------------------------|----------------------------|---------------------------------|-----------------------|------------------|------------------|------------------|
| 4<br>8<br>9           | 2<br>4<br>9      | 6                | 4<br>5<br>7                | 4<br>8<br>9                | 2<br>4<br>5<br>7                | 2<br>4<br>5<br>7      | 1<br>2<br>3<br>4 | 1<br>2<br>3<br>4 | 1<br>2<br>4<br>7 |
| 3                     | 5                | 4<br>8<br>9      | 4<br>7<br>8<br>9           | 1                          | 2<br>4<br>7<br>8                | 4                     | 6<br>8<br>9      | 2<br>4<br>7      | 9                |
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| 6                     | 7                | 2                | 1<br>4<br>5<br>8<br>9      | 4<br>8<br>9                | 1<br>4<br>5<br>8                | 1<br>4<br>5<br>8      | 1                | 3                |                  |
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|                       |                  |             |             |                       |                  |                  |                            |                       |             |
|-----------------------|------------------|-------------|-------------|-----------------------|------------------|------------------|----------------------------|-----------------------|-------------|
| 1<br>4<br>6<br>8      | 1<br>2<br>3<br>6 | 2<br>9      | 4           | 8                     | 7                | 1<br>5<br>7      | 3<br>5<br>6                | 1<br>5<br>9           | 1<br>5<br>9 |
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|                  |                  |             |                  |                  |             |             |        |             |  |
|------------------|------------------|-------------|------------------|------------------|-------------|-------------|--------|-------------|--|
| 2<br>3<br>6<br>7 | 1<br>2<br>3<br>7 | 1           | 1<br>4<br>7      | 3<br>5<br>7      | 1<br>3<br>6 | 8           | 9      | 1<br>4<br>6 |  |
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|             |                  |                  |                            |                       |                  |                  |                  |                  |  |
|-------------|------------------|------------------|----------------------------|-----------------------|------------------|------------------|------------------|------------------|--|
| 2           | 3<br>6<br>7      | 3                | 1                          | 4<br>8<br>7<br>8      | 3<br>6           | 3<br>4<br>9      | 5                |                  |  |
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| 5           | 1                | 2<br>3<br>7      | 2<br>7<br>8                | 2<br>6<br>8           | 6<br>7<br>8      | 4                | 2<br>3           | 9                |  |
| 3<br>8<br>9 | 3<br>4           | 6                | 2<br>4<br>5<br>9           | 1<br>2<br>4<br>5      | 1                | 1<br>2<br>3<br>5 | 7                | 1<br>2<br>3<br>8 |  |
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|                       |             |                       |                       |                  |                       |                                 |                       |                       |   |
|-----------------------|-------------|-----------------------|-----------------------|------------------|-----------------------|---------------------------------|-----------------------|-----------------------|---|
| 1                     | 2<br>4<br>5 | 2<br>4                | 7                     | 6                | 4<br>9                | 2<br>3<br>4<br>5                | 8                     | 4<br>5<br>9           | 3 |
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| 4                     | 1<br>2<br>7 | 1<br>2<br>6           | 1<br>2<br>5<br>6<br>9 | 8                | 1<br>2<br>3<br>9      | 3<br>5<br>6<br>7                | 1<br>3<br>5<br>7      | 1<br>3                |   |
| 6<br>8                | 3           | 9                     | 1<br>4<br>5<br>6      | 1<br>4           | 7                     | 4<br>5<br>6<br>8                | 1<br>4<br>5           | 2                     |   |
| 2<br>7<br>8           | 1<br>2<br>6 | 5                     | 1<br>2<br>4           | 1<br>2<br>4      | 1<br>2<br>3<br>4      | 9                               | 1<br>4<br>7           | 1<br>3<br>4<br>7<br>8 |   |



|       |       |     |         |   |       |
|-------|-------|-----|---------|---|-------|
| 1 2   | 6     | 3   | 4 2 2 2 | 9 | 1 2 1 |
| 1 2   | 5     | 7   | 8       | 6 | 1 2 1 |
| 8     | 4     | 2   | 2 3 2 3 | 1 | 3 2   |
| 1     | 1     | 1   | 6 6     | 5 | 2     |
| 5     | 3     | 2   | 2 3 3   | 1 | 4 6   |
| 1 2 3 | 1 3   | 1 2 | 2 3     | 7 | 4     |
| 1 3   | 2     | 1   | 3 1 3   | 8 | 1     |
| 1     | 6     | 8   | 1       | 6 | 5     |
| 4     | 1 3 1 | 5 6 | 3 1 3   | 3 | 1     |

|     |     |       |     |   |     |
|-----|-----|-------|-----|---|-----|
| 8   | 9   | 6     | 2   | 4 | 2   |
| 1   | 4 5 | 4 5   | 1 3 | 1 | 3   |
| 1 2 | 2   | 1 2 3 | 9   | 5 | 1 3 |
| 5   | 1   | 8     | 5 6 | 6 | 9   |
| 6   | 2   | 4     | 2   | 3 | 2   |
| 2   | 3   | 4     | 2   | 1 | 2   |
| 1   | 6   | 1     | 1   | 4 | 5   |
| 3   | 2   | 1 2   | 1   | 5 | 2   |
| 2   | 4   | 2     | 6   | 5 | 2   |

|       |       |   |     |   |       |
|-------|-------|---|-----|---|-------|
| 6     | 2 3   | 3 | 5   | 2 | 4 5   |
| 1 2 3 | 1 2 3 | 7 | 1   | 2 | 4 5 6 |
| 1     | 5     | 1 | 1   | 8 | 3     |
| 1     | 5     | 1 | 1   | 5 | 4     |
| 1 3   | 1 3   | 2 | 8   | 5 | 6     |
| 1     | 7     | 1 | 3   | 2 | 1 2   |
| 2 3   | 2 3   | 3 | 4   | 6 | 9     |
| 1     | 1     | 8 | 2   | 3 | 5     |
| 2     | 2     | 6 | 5 6 | 1 | 8     |

|     |     |     |     |     |   |
|-----|-----|-----|-----|-----|---|
| 2   | 1   | 1   | 4 5 | 2   | 3 |
| 6   | 3   | 4 5 | 3   | 2 3 | 1 |
| 2 3 | 1 3 | 8   | 4 5 | 9   | 6 |
| 4   | 2   | 3   | 1 3 | 1 3 | 3 |
| 1   | 5   | 6   | 7   | 3   | 2 |
| 8   | 6   | 7   | 2   | 1 3 | 4 |
| 3   | 4   | 6   | 7   | 1 3 | 3 |
| 5   | 3   | 1 3 | 1 5 | 4   | 3 |
| 7   | 8   | 2   | 1 3 | 1 3 | 5 |

|   |       |     |   |   |   |
|---|-------|-----|---|---|---|
| 4 | 1 3 1 | 6   | 1 | 5 | 2 |
| 6 | 1     | 1   | 1 | 2 | 1 |
| 2 | 1 3 1 | 5 6 | 4 | 6 | 4 |
| 5 | 6     | 8   | 2 | 3 | 1 |
| 3 | 1     | 1 2 | 7 | 4 | 6 |
| 3 | 4     | 2   | 2 | 5 | 3 |
| 1 | 6     | 4   | 5 | 9 | 4 |
| 6 | 5     | 4   | 4 | 6 | 2 |
| 6 | 2     | 3   | 1 | 4 | 5 |

|       |       |       |   |   |   |
|-------|-------|-------|---|---|---|
| 4     | 1 2 3 | 1 2 3 | 1 | 3 | 1 |
| 1 2 3 | 7     | 6     | 8 | 1 | 3 |
| 9     | 5     | 3     | 7 | 2 | 4 |
| 1     | 5     | 3     | 1 | 3 | 2 |
| 1 2 3 | 4     | 1 2 3 | 5 | 3 | 1 |
| 2 3   | 2 3   | 2 3   | 3 | 3 | 1 |
| 1 2   | 6     | 8     | 5 | 1 | 4 |
| 1 2   | 1 2   | 6     | 4 | 8 | 3 |
| 7     | 1 2 3 | 1 2 3 | 1 | 1 | 2 |

|                           |   |                               |                               |                               |   |                               |                               |                               |
|---------------------------|---|-------------------------------|-------------------------------|-------------------------------|---|-------------------------------|-------------------------------|-------------------------------|
| 2                         | <sup>1</sup> <sub>4</sub> <sup>6</sup> <sub>7 8</sub> | <sup>4</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 8 9</sub> | 3                             | <sup>1</sup> <sub>8</sub> <sup>6</sup> <sub>4</sub> <sup>1</sup> <sub>6</sub> | <sup>6</sup> <sub>7 8 9</sub> | <sup>7</sup> <sub>8 9</sub>   | 5                             |
| 3                         | <sup>4</sup> <sub>7 8</sub>                           | <sup>6</sup> <sub>7 8</sub>   | <sup>4</sup> <sub>7 8</sub>   | <sup>6</sup> <sub>7 8</sub>   | <sup>4</sup> <sub>8</sub>   | <sup>6</sup> <sub>7 8</sub>   | 5                             | 9                             |
| <sup>1</sup> <sub>6</sub> | 5   | <sup>6</sup> <sub>8 9</sub>   | <sup>6</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>8</sub>     | <sup>6</sup> <sub>7 8</sub>   | 7                             | 2                             | 4                             |
| 5                         | <sup>2 3</sup> <sub>6</sub>                           | <sup>2 3</sup> <sub>6</sub>   | <sup>1</sup> <sub>7</sub>     | <sup>6</sup> <sub>9</sub>     | <sup>1</sup> <sub>6</sub>   | <sup>3</sup> <sub>9</sub>     | 8                             | <sup>1 2 3</sup> <sub>4</sub> |
| 7                         | <sup>2 3</sup> <sub>8</sub>                           | <sup>6</sup> <sub>9</sub>     | 1                             | <sup>5 6</sup> <sub>9</sub>   | 4   | <sup>5 6</sup> <sub>9</sub>   | <sup>5</sup> <sub>8 9</sub>   | <sup>2 3</sup> <sub>9</sub>   |
| <sup>4</sup> <sub>9</sub> | <sup>4</sup> <sub>8</sub>                             | <sup>3</sup> <sub>4</sub>     | <sup>3</sup> <sub>8 9</sub>   | 2                             | <sup>1</sup> <sub>9</sub>   | <sup>3</sup> <sub>7</sub>     | <sup>5</sup> <sub>7 8 9</sub> | 6                             |
| <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>6</sub>                             | <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>7 8 9</sub> | <sup>5 6</sup> <sub>7 8 9</sub>   | <sup>6</sup> <sub>8 9</sub>   | <sup>5 6</sup> <sub>7</sub>   | 2                             |
| <sup>1</sup> <sub>4</sub> | <sup>1 2 3</sup> <sub>6</sub>                         | <sup>4</sup> <sub>7</sub>     | 5                             | <sup>1</sup> <sub>7</sub>     | <sup>4</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>9</sub>   | <sup>6</sup> <sub>4</sub>     | 8                             |
| 8                         | 9   | <sup>2</sup> <sub>4</sub>     | <sup>6</sup> <sub>7</sub>     | <sup>1</sup> <sub>4</sub>     | <sup>5 6</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>6</sub>   | 3                             | <sup>5 6</sup> <sub>7</sub>   |

|                                 |                               |                               |                               |                             |                               |                                   |                                 |                               |
|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------------|---------------------------------|-------------------------------|
| <sup>4</sup> <sub>7</sub>       | 3                             | <sup>6</sup> <sub>9</sub>     | 8                             | <sup>4</sup> <sub>7</sub>   | <sup>1</sup> <sub>9</sub>     | <sup>2</sup> <sub>6</sub>         | <sup>1 2</sup> <sub>6</sub>     | 5                             |
| <sup>1 2</sup> <sub>7 8</sub>   | <sup>1 2</sup> <sub>7 8</sub> | <sup>1</sup> <sub>7 8</sub>   | 5                             | <sup>3</sup> <sub>7</sub>   | 6                             | <sup>3</sup> <sub>8</sub>         | <sup>4</sup> <sub>8</sub>       | 9                             |
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| 9                               | <sup>1 2</sup> <sub>7 8</sub> | <sup>5</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>7</sub>     | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>8</sub>       | <sup>4 5 6</sup> <sub>7 8</sub> | <sup>5 6</sup> <sub>7 8</sub> |
| <sup>1 2 3</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub>7 8</sub> | 4                             | <sup>3</sup> <sub>7</sub>     | 5                           | <sup>2 3</sup> <sub>8 9</sub> | <sup>6</sup> <sub>7 8 9</sub>     | <sup>6</sup> <sub>7 8 9</sub>   | <sup>1</sup> <sub>6</sub>     |
| 6                               | <sup>5</sup> <sub>7 8</sub>   | <sup>7</sup> <sub>8</sub>     | 1                             | <sup>4</sup> <sub>9</sub>   | <sup>8</sup> <sub>9</sub>     | <sup>4 5</sup> <sub>7 8 9</sub>   | 3                               | 2                             |
| <sup>1</sup> <sub>5</sub>       | <sup>3</sup> <sub>8</sub>     | <sup>1</sup> <sub>4</sub>     | 2                             | <sup>3</sup> <sub>6</sub>   | <sup>1</sup> <sub>9</sub>     | <sup>4 5 6</sup> <sub>7 8 9</sub> | <sup>5 6</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>6</sub>     |
| <sup>1</sup> <sub>7 8</sub>     | <sup>4</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>7 8 9</sub> | <sup>2</sup> <sub>6</sub>   | <sup>1</sup> <sub>9</sub>     | 5                                 | <sup>4</sup> <sub>7</sub>       | <sup>2</sup> <sub>6</sub>     |
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|                               |                               |                             |                             |                               |                             |                               |                                 |                               |
|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|---------------------------------|-------------------------------|
| <sup>2</sup> <sub>4</sub>     | <sup>5 6</sup> <sub>8 9</sub> | 1                           | <sup>2</sup> <sub>5</sub>   | <sup>4</sup> <sub>6</sub>     | <sup>2 3</sup> <sub>9</sub> | 7                             | <sup>2 3</sup> <sub>5 6</sub>   | <sup>5 6</sup> <sub>8</sub>   |
| <sup>2</sup> <sub>4</sub>     | <sup>6</sup> <sub>7</sub>     | <sup>4</sup> <sub>7</sub>   | <sup>6</sup> <sub>7</sub>   | 8                             | 5                           | <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>6</sub>       | 9                             |
| <sup>2</sup> <sub>5 6</sub>   | <sup>6</sup> <sub>7 8 9</sub> | 3                           | <sup>1</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>9</sub>   | <sup>1</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>8</sub>   | <sup>5 6</sup> <sub>7 8</sub>   | 4                             |
| <sup>3</sup> <sub>6</sub>     | 2                             | <sup>1</sup> <sub>7</sub>   | <sup>5</sup> <sub>8 9</sub> | 4                             | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>5 6</sup> <sub>7 8 9</sub> | <sup>5 6</sup> <sub>7 9</sub> |
| 7                             | 5                             | <sup>4</sup> <sub>8</sub>   | 9                           | 6                             | 2                           | <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>8</sub>       | <sup>1</sup> <sub>3</sub>     |
| 1                             | <sup>3</sup> <sub>6</sub>     | <sup>4</sup> <sub>9</sub>   | <sup>5</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>     | 8                           | <sup>4 5 6</sup> <sub>7</sub> | <sup>2</sup> <sub>5 6</sub>     | <sup>9</sup>                  |
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| <sup>4 5</sup> <sub>8 9</sub> | <sup>4</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>7</sub>   | <sup>5</sup> <sub>7</sub>   | <sup>1</sup> <sub>7</sub>     | <sup>4</sup> <sub>6</sub>   | <sup>1</sup> <sub>4 5 6</sub> | 3                               | <sup>1 2</sup> <sub>5 6</sub> |
| <sup>2 3</sup> <sub>4</sub>   | <sup>3</sup> <sub>4</sub>     | <sup>1 2</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>9</sub>   | 5                             | 7                               | <sup>1</sup> <sub>4</sub>     |

|                               |                               |                           |                           |                             |                               |                           |                               |                             |
|-------------------------------|-------------------------------|---------------------------|---------------------------|-----------------------------|-------------------------------|---------------------------|-------------------------------|-----------------------------|
| <sup>1</sup> <sub>5</sub>     | <sup>1</sup> <sub>5</sub>     | 2                         | <sup>1</sup> <sub>7</sub> | <sup>3</sup> <sub>5 9</sub> | <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>9</sub> | 6                             | 8                           |
| <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>8 9</sub>   | 3                         | <sup>1</sup> <sub>7</sub> | <sup>5 6</sup> <sub>9</sub> | <sup>4 5 6</sup> <sub>7</sub> | <sup>1</sup> <sub>9</sub> | 2                             | <sup>1</sup> <sub>4</sub>   |
| <sup>1</sup> <sub>6</sub>     | 7                             | 4                         | <sup>1</sup> <sub>6</sub> | 8                           | 2                             | 3                         | 5                             | <sup>1</sup> <sub>9</sub>   |
| <sup>1 2</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>6</sub>   | <sup>1</sup> <sub>7</sub> | <sup>6</sup> <sub>9</sub> | 4                           | 3                             | 5                         | <sup>2</sup> <sub>7 8</sub>   | 9                           |
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| <sup>2</sup> <sub>4 5 6</sub> | <sup>2</sup> <sub>4 5 6</sub> | 8                         | <sup>2</sup> <sub>6</sub> | 7                           | <sup>6</sup> <sub>9</sub>     | 1                         | <sup>4</sup> <sub>6</sub>     | 3                           |
| <sup>2</sup> <sub>4</sub>     | <sup>2</sup> <sub>4</sub>     | <sup>1</sup> <sub>7</sub> | <sup>6</sup> <sub>9</sub> | <sup>1</sup> <sub>5 6</sub> | <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>6</sub>   |
| <sup>1</sup> <sub>6</sub>     | <sup>1</sup> <sub>6</sub>     | <sup>3</sup> <sub>6</sub> | 5                         | 8                           | 9                             | 7                         | <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>6</sub>   |
| <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>6</sub>     | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>3</sub>   | 2                             | 4                         | 5                             | <sup>1</sup> <sub>7</sub>   |

|                             |                               |                               |                               |                           |                           |                             |                             |                                 |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|---------------------------------|
| 8                           | <sup>2</sup> <sub>5 6</sub>   | <sup>5 6</sup> <sub>9</sub>   | 3                             | 1                         | <sup>2</sup> <sub>5</sub> | 7                           | <sup>2</sup> <sub>4</sub>   | <sup>2</sup> <sub>6</sub>       |
| <sup>2 3</sup> <sub>7</sub> | <sup>2 3</sup> <sub>5 6</sub> | <sup>5 6</sup> <sub>7 9</sub> | 8                             | 4                         | <sup>2</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>6</sub> | <sup>1 2 3</sup> <sub>9</sub>   |
| 4                           | <sup>2 3</sup> <sub>7</sub>   | 1                             | 7                             | 6                         | 9                         | 5                           | <sup>2</sup> <sub>8</sub>   | <sup>2 3</sup> <sub>8</sub>     |
| <sup>1</sup> <sub>7</sub>   | <sup>1</sup> <sub>5 6</sub>   | <sup>4</sup> <sub>7</sub>     | <sup>5</sup> <sub>9</sub>     | 2                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub>   | <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>7</sub>       |
| <sup>1</sup> <sub>7</sub>   | <sup>5 6</sup> <sub>7</sub>   | 8                             | <sup>4 5 6</sup> <sub>7</sub> | 9                         | <sup>5</sup> <sub>7</sub> | <sup>3</sup> <sub>4</sub>   | <sup>1</sup> <sub>6</sub>   | <sup>1 2 3</sup> <sub>4 5</sub> |
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| <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>6</sub>     | 8                             | <sup>1</sup> <sub>4</sub>     | <sup>2</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>9</sub>   | <sup>5</sup> <sub>7</sub>   | <sup>5</sup> <sub>7</sub>       |
| <sup>1 2</sup> <sub>5</sub> | <sup>1 2</sup> <sub>4 5</sub> | <sup>4 5</sup> <sub>9</sub>   | 6                             | 7                         | 3                         | <sup>1 2</sup> <sub>4</sub> | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>4</sub>       |
| <sup>1 2</sup> <sub>9</sub> | 7                             | <sup>4</sup> <sub>9</sub>     | 5                             | <sup>2</sup> <sub>9</sub> | 8                         | <sup>1 2</sup> <sub>4</sub> | 3                           | 6                               |

|                           |                             |                             |                                 |                           |                               |                                 |                               |                               |
|---------------------------|-----------------------------|-----------------------------|---------------------------------|---------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|
| 8                         | 4                           | <sup>2 3</sup> <sub>7</sub> | <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>5</sub> | <sup>1 2</sup> <sub>5</sub>   | <sup>1 2 3</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>5 6</sub> |
| 9                         | 5                           | <sup>2 3</sup> <sub>7</sub> | <sup>1</sup> <sub>4</sub>       | <sup>3</sup> <sub>7</sub> | 6                             | <sup>1 2 3</sup> <sub>4 7</sub> | <sup>1 2</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>8</sub>   |
| 1                         | <sup>2 3</sup> <sub>7</sub> | 6                           | <sup>5</sup> <sub>7</sub>       | <sup>3</sup> <sub>7</sub> | 8                             | 9                               | <sup>2 3</sup> <sub>5</sub>   | <sup>3</sup> <sub>5</sub>     |
| 3                         | <sup>2</sup> <sub>7</sub>   | <sup>6</sup> <sub>7</sub>   | <sup>5 6</sup> <sub>7</sub>     | <sup>4</sup> <sub>7</sub> | <sup>2</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5</sub>       | 1                             | 9                             |
| 5                         | <sup>2</sup> <sub>6</sub>   | 4                           | <sup>1</sup> <sub>6</sub>       | <sup>3</sup> <sub>9</sub> | <sup>1 2</sup> <sub>9</sub>   | <sup>1 2 3</sup> <sub>6</sub>   | 8                             | 7                             |
| <sup>2</sup> <sub>7</sub> | 1                           | 9                           | <sup>5</sup> <sub>7 8</sub>     | <sup>2</sup> <sub>5</sub> | <sup>2 3</sup> <sub>7 8</sub> | <sup>5</sup> <sub>7 8</sub>     | 6                             | <sup>3</sup> <sub>5</sub>     |
| <sup>4</sup> <sub>6</sub> | <sup>8</sup> <sub>9</sub>   | 5                           | 2                               | 7                         | <sup>1</sup> <sub>4</sub>     | <sup>6</sup> <sub>8</sub>       | 3                             | <sup>1</sup> <sub>6</sub>     |
| <sup>4</sup> <sub>6</sub> | <sup>8</sup> <sub>9</sub>   | 1                           | <sup>4 5 6</sup> <sub>8 9</sub> | 3                         | <sup>4 5 6</sup> <sub>8</sub> | <sup>5</sup> <sub>9</sub>       | 7                             | 2                             |
| <sup>2</sup> <sub>7</sub> | <sup>2 3</sup> <sub>7</sub> | <sup>2 3</sup> <sub>7</sub> | <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>5</sub>       | <sup>5 6</sup> <sub>8 9</sub> | 4                             |

|                               |                               |                                 |                                 |                               |                               |                               |                                 |                                 |                               |
|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|
| 5                             | <sup>1 2</sup> <sub>4</sub>   | <sup>1 2</sup> <sub>4 7 8</sub> | <sup>1 2 3</sup> <sub>4 8</sub> | 6                             | <sup>4</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>7</sub>       | <sup>1</sup> <sub>7</sub>       | <sup>1 2</sup> <sub>7 9</sub> |
| 9                             | 6                             | <sup>1 2</sup> <sub>4 7</sub>   | <sup>1 2</sup> <sub>4</sub>     | <sup>2</sup> <sub>7</sub>     | <sup>4</sup> <sub>7</sub>     | 5                             | 8                               | 3                               |                               |
| <sup>1 2</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub></sub>    | 3                               | <sup>1 2</sup> <sub>8</sub>     | 9                             | 5                             | 4                             | <sup>1</sup> <sub>7</sub>       | <sup>1 2</sup> <sub>6 7</sub>   | 6                             |
| 6                             | <sup>2 3</sup> <sub>9</sub>   | <sup>2</sup> <sub>5 8</sub>     | <sup>3</sup> <sub>8 9</sub>     | 4                             | <sup>3</sup> <sub>8 9</sub>   | 1                             | <sup>5</sup> <sub>7 9</sub>     | <sup>2</sup> <sub>7 8 9</sub>   | <sup>5</sup> <sub>8 9</sub>   |
| <sup>2 3</sup> <sub>8</sub>   | <sup>2 3</sup> <sub>4 9</sub> | <sup>2</sup> <sub>4 5 8</sub>   | 7                               | 1                             | <sup>3</sup> <sub>6 8 9</sub> | <sup>2 3</sup> <sub>8 9</sub> | <sup>4 5 6</sup> <sub>8 9</sub> | <sup>4 5 6</sup> <sub>8 9</sub> | <sup>2</sup> <sub>8 9</sub>   |
| <sup>1</sup> <sub>8</sub>     | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>4 8</sub>     | <sup>3</sup> <sub>6 8 9</sub>   | 5                             | 2                             | <sup>3</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>4 6 9</sub>   | <sup>4</sup> <sub>6 8 9</sub>   | 6                             |
| <sup>3</sup> <sub>7</sub>     | 5                             | 6                               | <sup>4</sup> <sub>9 7 8</sub>   | 1                             | <sup>3</sup> <sub>7 8 9</sub> | 2                             | <sup>4</sup> <sub>7 8 9</sub>   | <sup>3</sup> <sub>1</sub>       |                               |
| 4                             | <sup>1 2 3</sup> <sub>7</sub> | <sup>1 2</sup> <sub></sub>      | 5                               | <sup>2 3</sup> <sub>7 8</sub> | <sup>7</sup> <sub>9</sub>     | 6                             | <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>7 8 9</sub>   | 1                             |
| <sup>1 2 3</sup> <sub>7</sub> | 8                             | 9                               | <sup>2</sup> <sub>4 6</sub>     | <sup>2 3</sup> <sub>7</sub>   | <sup>4</sup> <sub>6</sub>     | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>4 5</sub>     | <sup>3</sup> <sub>4 5</sub>     | <sup>1</sup> <sub>7</sub>     |

|                                     |                           |                                 |                             |                               |                             |                             |                               |                               |                               |
|-------------------------------------|---------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|
| <sup>1</sup> <sub>4 7</sub>         | 2                         | 3                               | <sup>1</sup> <sub>4 5</sub> | <sup>1</sup> <sub>4 5 8</sub> | 6                           | <sup>1</sup> <sub>4 7</sub> | <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>4</sub>     | <sup>9</sup> <sub></sub>      |
| <sup>1</sup> <sub>4</sub>           | 5                         | 6                               | 7                           | <sup>1 2</sup> <sub>4 8</sub> | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>4</sub>   | <sup>1 2</sup> <sub>8 9</sub> | 3                             |                               |
| <sup>1</sup> <sub>4</sub>           | 8                         | <sup>1</sup> <sub>4</sub>       | <sup>1</sup> <sub>4</sub>   | <sup>1 2</sup> <sub>4</sub>   | <sup>1</sup> <sub>4</sub>   | <sup>1 3</sup> <sub>4</sub> | 5                             | <sup>1 2</sup> <sub>6 7</sub> | <sup>1</sup> <sub>4 6 9</sub> |
| <sup>2</sup> <sub>7</sub>           | <sup>1</sup> <sub>6</sub> | <sup>2</sup> <sub>5</sub>       | <sup>1</sup> <sub>4</sub>   | 6                             | 9                           | <sup>1</sup> <sub>4 5</sub> | 8                             | 3                             | <sup>1</sup> <sub>6</sub>     |
| <sup>3</sup> <sub>7</sub>           | <sup>3</sup> <sub>9</sub> | <sup>3</sup> <sub>7</sub>       | <sup>5</sup> <sub>9</sub>   | 8                             | <sup>1</sup> <sub>6</sub>   | <sup>1</sup> <sub>5</sub>   | 2                             | 4                             | <sup>1</sup> <sub>6</sub>     |
| <sup>1</sup> <sub>4</sub>           | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub>       | <sup>1</sup> <sub>6</sub>   | 2                             | 3                           | 7                           | 9                             | <sup>1</sup> <sub>6</sub>     | 5                             |
| 5                                   | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>6</sub>       | <sup>1</sup> <sub>4</sub>   | 9                             | <sup>1</sup> <sub>4 6</sub> | <sup>1</sup> <sub>4</sub>   | 3                             | <sup>1</sup> <sub>7</sub>     | 2                             |
| <sup>1</sup> <sub>4</sub>           | <sup>3</sup> <sub>6</sub> | <sup>3</sup> <sub>9</sub>       | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>7</sub>   | 2                           | <sup>1</sup> <sub>4 6</sub>   | <sup>1</sup> <sub>7 9</sub>   | 8                             |
| <sup>1 2 3</sup> <sub>4 6 8 9</sub> | 7                         | <sup>1 2</sup> <sub>4 8 9</sub> | <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>4</sub>     | 5                             | <sup>1</sup> <sub>4</sub>     |

|                               |                               |                               |                               |                               |                             |                               |                               |                             |                             |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>5</sub>     | <sup>1</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>4 5 6</sub> | <sup>2</sup> <sub>4 5 6</sub> | 7                           | <sup>2</sup> <sub>4 5 6</sub> | 8                             | 3                           |                             |
| <sup>3</sup> <sub>4 8 9</sub> | 7                             | 2                             | <sup>3</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>8</sub>     | <sup>4</sup> <sub>6</sub>   | <sup>4 5 6</sup> <sub>9</sub> | <sup>4 5 6</sup> <sub>9</sub> | 1                           |                             |
| <sup>1</sup> <sub>4</sub>     | <sup>3</sup> <sub>5 8</sub>   | 6                             | <sup>1</sup> <sub>4 5</sub>   | 9                             | <sup>1 2</sup> <sub>4</sub> | <sup>2</sup> <sub>4 5</sub>   | <sup>2</sup> <sub>4 5</sub>   | 7                           |                             |
| <sup>2</sup> <sub>7 8 9</sub> | 4                             | <sup>7</sup> <sub>9</sub>     | <sup>6</sup> <sub>8</sub>     | 1                             | 5                           | <sup>2</sup> <sub>7</sub>     | <sup>3</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>6</sub>   | <sup>6</sup> <sub>8 9</sub> |
| 5                             | <sup>1 2</sup> <sub>8</sub>   | <sup>1</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>4 6</sub>   | <sup>3</sup> <sub>8</sub>     | <sup>4</sup> <sub>6</sub>   | <sup>4</sup> <sub>6</sub>     | <sup>1 2</sup> <sub>4 6</sub> | <sup>2</sup> <sub>4 6</sub> | <sup>2</sup> <sub>6</sub>   |
| 6                             | <sup>1</sup> <sub>8</sub>     | <sup>3</sup> <sub>1 3</sub>   | <sup>1</sup> <sub>9</sub>     | 2                             | 7                           | <sup>4</sup> <sub>9</sub>     | <sup>4 5</sup> <sub>9</sub>   | <sup>1</sup> <sub>4 5</sub> | <sup>4</sup> <sub>8 9</sub> |
| <sup>2 3</sup> <sub>4 7</sub> | <sup>2 3</sup> <sub>5 6</sub> | <sup>3</sup> <sub>4 5 7</sub> | <sup>2</sup> <sub>7 9</sub>   | <sup>4</sup> <sub>6</sub>     | 8                           | 1                             | <sup>2</sup> <sub>4 6</sub>   | <sup>2</sup> <sub>4 6</sub> | <sup>2</sup> <sub>9</sub>   |
| <sup>2</sup> <sub>4</sub>     | 9                             | 8                             | <sup>1</sup> <sub>4 5 6</sub> | <sup>2</sup> <sub>4 5 6</sub> | <sup>1 2<sub></sub></sup>   | 3                             | 7                             | <sup>2</sup> <sub>4 6</sub> |                             |
| <sup>1 2</sup> <sub>4</sub>   | <sup>1 2</sup> <sub>6 4</sub> | <sup>1</sup> <sub>7</sub>     | <sup>2</sup> <sub>4 6</sub>   | 3                             | 8                           | <sup>2</sup> <sub>4 6</sub>   | <sup>2</sup> <sub>9</sub>     | 5                           |                             |

|                               |                             |                             |                               |                                 |                               |                                 |                                 |                               |                             |
|-------------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|-----------------------------|
| 4                             | 2                           | <sup>1</sup> <sub>6 9</sub> | <sup>6</sup> <sub>8</sub>     | 5                               | <sup>6</sup> <sub>8 9</sub>   | 7                               | 3                               | <sup>1</sup> <sub>6</sub>     | <sup>8</sup> <sub></sub>    |
| 5                             | <sup>3</sup> <sub>6</sub>   | <sup>1</sup> <sub>3</sub>   | <sup>2 3</sup> <sub>6</sub>   | <sup>1 2 3</sup> <sub>7 8</sub> | <sup>2</sup> <sub>6</sub>     | <sup>6</sup> <sub>8 9</sub>     | <sup>6</sup> <sub>8 9</sub>     | 4                             |                             |
| 8                             | <sup>3</sup> <sub>6 9</sub> | 7                           | <sup>4</sup> <sub>6</sub>     | <sup>1</sup> <sub>3</sub>       | <sup>3</sup> <sub>4</sub>     | <sup>6</sup> <sub>9</sub>       | 2                               | 5                             | <sup>1</sup> <sub>6</sub>   |
| 1                             | <sup>4</sup> <sub>8 9</sub> | <sup>3</sup> <sub>4</sub>   | <sup>3</sup> <sub>9</sub>     | <sup>2 3</sup> <sub>7 8</sub>   | 6                             | <sup>2</sup> <sub>7 8</sub>     | <sup>3</sup> <sub>4 8 9</sub>   | <sup>2 3</sup> <sub>7 8</sub> | <sup>6</sup> <sub>8 9</sub> |
| <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>8</sub>   | 2                             | 9                               | 4                             | 1                               | <sup>3</sup> <sub>8</sub>       | <sup>6</sup> <sub>7 8</sub>   | 5                           |
| <sup>3</sup> <sub>7 9</sub>   | 5                           | <sup>4</sup> <sub>6</sub>   | <sup>2 3</sup> <sub>7 8</sub> | <sup>2 3</sup> <sub>7</sub>     | <sup>2</sup> <sub>7 8</sub>   | 1                               | <sup>4</sup> <sub>6 7 8 9</sub> | <sup>2 3</sup> <sub>7 8</sub> | <sup>6</sup> <sub>8</sub>   |
| <sup>3</sup> <sub>6 4</sub>   | <sup>3</sup> <sub>6 4</sub> | <sup>3</sup> <sub>6 4</sub> | 1                             | 8                               | <sup>5 6</sup> <sub>7 9</sub> | <sup>5 6<sub>2</sub></sup>      | 2                               | <sup>3</sup> <sub>7</sub>     | <sup>6</sup> <sub>8</sub>   |
| <sup>2</sup> <sub>6</sub>     | 1                           | 8                           | <sup>2</sup> <sub>4 5 6</sub> | <sup>2</sup> <sub>7</sub>       | 3                             | <sup>4 5 6</sup> <sub>4 7</sub> | <sup>4</sup> <sub>6</sub>       | 9                             |                             |
| <sup>2 3</sup> <sub>6 9</sub> | 7                           | 5                           | <sup>2</sup> <sub>4 6</sub>   | <sup>2</sup> <sub>9</sub>       | <sup>2</sup> <sub>4 6</sub>   | <sup>3</sup> <sub>4 8</sub>     | 1                               | <sup>3</sup> <sub>6 8</sub>   |                             |

|                                 |                             |                                 |                             |                                 |                                   |                                 |                               |                             |                             |
|---------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|-----------------------------------|---------------------------------|-------------------------------|-----------------------------|-----------------------------|
| <sup>3</sup> <sub>7 8</sub>     | <sup>3</sup> <sub>7 8</sub> | 1                               | 2                           | 4                               | 5                                 | <sup>3</sup> <sub>7 8</sub>     | 6                             | 9                           |                             |
| <sup>3</sup> <sub>7 8</sub>     | 2                           | <sup>4 5</sup> <sub>3</sub>     | 6                           | <sup>1</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>8 9</sub>       | <sup>1</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>5</sub>   | <sup>5</sup> <sub>7 8</sub> |
| 9                               | <sup>4</sup> <sub>8</sub>   | <sup>3</sup> <sub>6 4 5 6</sub> | 7                           | <sup>1</sup> <sub>8</sub>       | <sup>1</sup> <sub>8</sub>         | <sup>1 2 3</sup> <sub>4 8</sub> | <sup>2 3</sup> <sub>5 8</sub> | <sup>1</sup> <sub>5 8</sub> |                             |
| 4                               | <sup>3</sup> <sub>8 9</sub> | 7                               | <sup>3</sup> <sub>8 9</sub> | 6                               | <sup>2 3</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>8</sub>       | 1                             | <sup>5</sup> <sub>8</sub>   |                             |
| <sup>1 2 3</sup> <sub>8</sub>   | <sup>1</sup> <sub>8 9</sub> | <sup>2 3</sup> <sub>9</sub>     | 5                           | <sup>1 2 3</sup> <sub>8 9</sub> | <sup>1 2 3</sup> <sub>4 8 9</sub> | <sup>2</sup> <sub>7</sub>       | <sup>6</sup> <sub>4 8</sub>   | <sup>7</sup> <sub>6</sub>   |                             |
| <sup>1 2</sup> <sub>5 6 8</sub> | <sup>1</sup> <sub>8</sub>   | <sup>2</sup> <sub>5 6</sub>     | 4                           | <sup>1 2</sup> <sub>7 8</sub>   | <sup>1 2</sup> <sub>4 7 8</sub>   | 9                               | <sup>2</sup> <sub>8</sub>     | 3                           |                             |
| <sup>3</sup> <sub>7</sub>       | <sup>4</sup> <sub>7 9</sub> | <sup>3</sup> <sub>4</sub>       | 1                           | <sup>5</sup> <sub>7 8 9</sub>   | 6                                 | <sup>5</sup> <sub>8</sub>       | <sup>5</sup> <sub>8 9</sub>   | 2                           |                             |
| <sup>1 2 3</sup> <sub>6</sub>   | <sup>1</sup> <sub>6 9</sub> | <sup>2 3</sup> <sub>6 9</sub>   | <sup>3</sup> <sub>8 9</sub> | <sup>2 3</sup> <sub>8 9</sub>   | <sup>2 3</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>8</sub>       | <sup>5 6</sup> <sub>8</sub>   | 7                           | 4                           |
| <sup>1 2 3</sup> <sub>7</sub>   | 5                           | 8                               | <sup>4</sup> <sub>9</sub>   | <sup>3</sup> <sub>7 9</sub>     | <sup>2 3</sup> <sub>4 7 9</sub>   | <sup>1</sup> <sub>6</sub>       | <sup>3</sup> <sub>9</sub>     | <sup>1</sup> <sub>6</sub>   |                             |

|                             |                               |                               |                             |                               |                                 |                               |                               |                               |                               |
|-----------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 1                           | <sup>2</sup> <sub>7</sub>     | <sup>2</sup> <sub>6 4 7</sub> | <sup>4</sup> <sub>9</sub>   | <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>4 7 9</sub> | 5                             | <sup>2</sup> <sub>4 7</sub>   | 8                             |
| 8                           | 3                             | <sup>4</sup> <sub>7</sub>     | 6                           | 5                             | 1                               | <sup>4</sup> <sub>7</sub>     | <sup>2</sup> <sub>4 7</sub>   | 9                             | <sup>2</sup> <sub>4 7</sub>   |
| 9                           | <sup>5 6</sup> <sub>7</sub>   | <sup>4 5 6</sup> <sub>7</sub> | 2                           | <sup>4</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7 8</sub>     | 3                             | <sup>4</sup> <sub>7</sub>     | 1                             |                               |
| <sup>2 3</sup> <sub>7</sub> | 4                             | <sup>2</sup> <sub>8</sub>     | 7                           | 1                             | <sup>3</sup> <sub>8</sub>       | 9                             | <sup>2 3</sup> <sub>8</sub>   | 5                             |                               |
| <sup>3</sup> <sub>7</sub>   | <sup>6</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>8 9</sub> | 2                             | 5                               | 1                             | <sup>4</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>4 6</sub>   | <sup>3</sup> <sub>6</sub>     |
| 5                           | <sup>2</sup> <sub>7 8 9</sub> | 1                             | <sup>3</sup> <sub>8 9</sub> | 4                             | <sup>3</sup> <sub>8 9</sub>     | <sup>6</sup> <sub>7</sub>     | <sup>2 3</sup> <sub>7 8</sub> | <sup>2 3</sup> <sub>7</sub>   | <sup>6</sup> <sub>8</sub>     |
| <sup>2</sup> <sub>4 7</sub> | 1                             | <sup>2</sup> <sub>7</sub>     | 5                           | 6                             | <sup>4</sup> <sub>7</sub>       | <sup>2 3</sup> <sub>7</sub>   | 8                             | <sup>2 3</sup> <sub>4 7</sub> | 9                             |
| 6                           | <sup>8</sup> <sub>9</sub>     | 3                             | 1                           | <sup>2</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>7 8 9</sub>   | <sup>2</sup> <sub>4 7</sub>   | 5                             | <sup>2</sup> <sub>4 7</sub>   | <sup>2</sup> <sub>4 7</sub>   |
| <sup>2</sup> <sub>4 7</sub> | <sup>5</sup> <sub>8 9</sub>   | <sup>5</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>8 9</sub> | <sup>3</sup> <sub>7 8 9</sub> | <sup>2 3</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>7</sub>     | 6                             | 1                             | <sup>2 3</sup> <sub>4 7</sub> |

|     |       |     |     |     |     |   |   |   |
|-----|-------|-----|-----|-----|-----|---|---|---|
| 1 2 | 2 3 1 |     | 3   | 7   | 2   | 4 | 6 | 5 |
| 9   |       | 8 9 | 8   |     | 9   |   |   |   |
| 2 3 | 4     |     | 5 6 | 2 3 | 2 3 | 1 | 7 | 2 |
| 5 9 |       | 8 9 |     | 5 6 | 5 6 |   |   | 8 |
| 2   | 7     | 6   | 1   | 2   | 4   | 3 | 9 | 2 |
| 5   |       |     |     | 5 8 |     |   |   | 8 |
| 7   | 8     | 5   | 9   | 6   | 1   | 2 | 3 | 4 |
| 2   | 2 3   |     | 3   |     |     | 7 | 6 | 5 |
| 9   | 4     | 9   | 8   | 4   | 8   |   |   |   |
| 1 3 | 6     | 1 4 | 2   | 4 5 | 5 3 | 9 | 8 | 7 |
|     |       |     |     |     |     |   |   |   |
| 8   | 1 5   | 2   | 5 6 | 1 3 | 3   | 7 | 4 | 9 |
|     |       |     |     | 5 6 |     |   |   |   |
| 6   | 1     | 7   | 4   | 1   | 8   | 5 | 2 | 3 |
|     | 9     |     |     | 9   |     |   |   |   |
| 4   | 5     | 3   | 7   | 2   | 2   | 8 | 1 | 6 |
|     | 9     |     |     | 5 9 | 9   |   |   |   |

|     |     |     |       |     |     |     |     |     |
|-----|-----|-----|-------|-----|-----|-----|-----|-----|
| 2   |     |     |       | 2   |     | 2   |     | 2   |
| 4 6 | 4 6 | 7   |       | 6   | 1   | 6   | 2   | 6   |
| 8 9 | 8 9 |     |       | 8 9 |     | 8   | 6   | 9   |
| 2 3 | 1   | 2 3 | 2 3   | 2 3 | 4   | 2   | 2   | 2   |
| 5 9 |     | 5 9 | 5 6   | 7 6 |     | 7 6 | 7 9 |     |
| 2   |     | 2   | 2     | 2   | 2   | 1   | 4   | 4 6 |
| 6 9 | 5 6 | 8 9 | 8 9   | 7 9 | 7 8 |     | 7   | 9   |
| 5   | 4   | 3   | 4     | 3   | 2   | 1   | 8   | 6   |
|     | 9   |     | 9     |     | 9   |     | 7   | 9   |
| 1 3 | 3   | 1 3 | 4 5 6 | 5 4 | 3   | 3   | 1   | 5 6 |
| 4 7 | 4   | 4   | 8 9   | 7 9 | 7   | 7   | 5 6 | 2   |
| 1 3 | 2   | 6   | 5     | 5   | 3   | 4   | 1   | 1 3 |
| 7 9 |     |     | 8 9   | 7 9 | 7 8 |     | 7   | 9   |
| 1 3 |     | 3   | 1 3   | 2   | 2   |     | 3   | 1   |
| 6 9 | 5 6 | 5   | 5     | 4   | 4   | 7   | 5 6 | 5 6 |
|     |     |     |       |     |     |     | 7   | 7   |
| 8   | 4   | 3   | 1 2 3 | 7   | 6   | 5   | 2 3 | 9   |
|     |     | 4   |       |     |     |     |     | 1 4 |
| 4 2 | 7   | 4 5 | 1     | 3   | 9   | 2   | 5 6 | 4   |
|     |     |     |       |     |     |     |     | 8   |

|     |     |         |       |       |       |       |     |     |
|-----|-----|---------|-------|-------|-------|-------|-----|-----|
| 6   | 1   | 1       | 3     | 1     | 2     | 5     | 4   |     |
|     | 7 9 | 4 7 8 9 |       | 7 8 9 |       |       | 7 9 | 8 9 |
| 4   | 5   | 4       | 3     | 4     | 6 4 6 | 4     | 1   | 2   |
| 8 9 |     | 7 8 9   | 7 8 9 | 7 8 9 | 7 8 9 | 8 9   |     |     |
| 1   | 2   | 1 3     | 5     | 1     | 4     | 3     | 3   | 3   |
| 4   |     | 4       | 7 8 9 | 7 8 9 | 7 8 9 | 8 9   | 4 6 | 6   |
| 7   | 4   | 2       | 6     | 1 3   | 5     | 1 3   |     |     |
|     |     |         |       | 8 9   |       | 8 9   | 9   | 8 9 |
| 1   | 1   | 1       | 2     | 1 2 3 | 1 3   | 1 3   | 5   | 4   |
| 8 9 | 6   | 6       | 7 9   | 7 9   | 7 9   | 6     |     |     |
| 3   | 1   | 5       | 4     | 1     | 1     | 1     | 2   | 7   |
|     | 6 9 |         | 8 9   | 8 9   | 8 9   | 6 8 9 |     |     |
| 2   | 8   | 4 6     | 1     | 5     | 6 4   | 3 4   | 6   | 6   |
|     |     | 7 9     |       |       | 7 9   | 9     | 9   | 9   |
| 1   | 1   | 3 1     |       | 4     | 3 6   | 3 1   | 5   |     |
| 5 9 | 7 9 | 7 9     | 7 8 9 | 7 8 9 | 7 8 9 | 8 9   |     |     |
| 1   | 1   | 3 1     | 2     | 2 3   | 3     | 3 1   |     |     |
| 4 5 | 6 4 | 6 9     | 8 9   | 8 9   | 6 8 9 | 7 4 6 | 5   |     |

|     |       |       |       |       |       |     |       |       |
|-----|-------|-------|-------|-------|-------|-----|-------|-------|
| 1   | 2     | 2     | 3     | 5     | 6     | 5   | 8     | 2     |
|     | 7     | 4 7   |       | 9     |       | 5 9 | 4 7   |       |
| 4   | 3     | 2 3   | 1 2   | 5     | 7     | 1 3 | 1 2 3 | 1 2 3 |
| 8   |       | 8     | 8 9   | 8 9   |       | 4 5 | 5 9   |       |
| 9   | 2 3   | 5     | 1 2   | 4     | 1     | 1 3 | 1 2 3 | 6     |
|     | 7 8   |       | 8     |       | 7     | 7   |       |       |
| 2   | 1     | 3     | 1     | 5     | 5     | 1   | 1     | 1     |
|     | 7 8 9 |       | 8 9   | 7 8 9 | 8 9   | 4 5 | 4     |       |
| 5   | 6     | 1     | 1     | 2     | 1     | 3   | 8     | 3     |
|     |       | 7 9   | 9     |       | 4     | 9   | 7 9   |       |
|     | 4     | 1     | 6     | 3     | 1     | 3   | 1 2 3 | 1 2 3 |
| 7 8 | 7 8 9 | 7 8 9 | 7 8 9 | 5 8 9 | 5 8 9 | 7 5 | 5 9   | 7     |
| 3   | 1 2 3 | 1 2   | 4     | 5 6   | 5     | 1   | 3     | 1     |
|     | 5     | 7 8   | 8     | 8     | 7     | 7   | 6     | 9     |
| 7 8 | 7 8   | 7 8   | 7     | 5 6   | 3     | 1   | 3     |       |
| 4   | 3     | 1 2 3 | 1 2   | 7     | 5 6   | 2 3 | 1 3   | 1     |
|     | 5     | 9     | 9     |       | 9     | 4   | 6     | 8     |
| 6   | 3     |       |       | 1     | 3     | 2   | 3     | 5     |
|     | 7 8 9 | 7 8 9 | 8 9   | 8 9   | 8 9   | 4 7 |       |       |

|     |     |     |     |       |       |       |       |     |
|-----|-----|-----|-----|-------|-------|-------|-------|-----|
| 2   |     | 2   | 1   | 1     | 8     | 3     | 7     | 1   |
| 5 9 | 5 9 | 9   | 4   | 6     |       |       |       | 4 6 |
| 3   | 7   | 3   | 9   | 1 5 6 | 1 4 5 | 1     | 2     | 1   |
| 8   |     | 8   |     |       |       | 6     |       | 4 6 |
| 4   | 6   | 1   | 2   | 3     | 2     | 5 8 9 | 5 9   | 5 8 |
|     |     |     | 7   | 7     |       |       |       |     |
| 2   | 4   | 2   | 3   | 9     | 1     | 1     | 8     | 1   |
| 7   |     | 7   |     | 5     | 5 6   | 5 6   |       | 5 6 |
|     | 1   |     | 4 5 | 2 5   | 6     | 4 5   | 4 5   | 3   |
| 8 9 |     | 8 9 | 7   | 7     |       | 7     |       |     |
| 6   | 3   | 5   | 1   | 8     | 1     | 1     | 2     |     |
|     |     |     | 4 7 | 4 7   | 4 7   | 9     |       |     |
| 1   | 5   | 5   | 1 2 | 1 2   | 3     | 1 2   | 1     | 7   |
| 9   | 8 9 | 4 6 | 5 8 | 5     | 4 5 6 | 4 5 6 | 4 5 6 |     |
| 1 3 | 5   | 4   | 6   | 1 2   | 1 2   | 1 2   | 1 3   | 9   |
| 7   | 8   | 7   | 7   | 5     | 4 5   | 8     | 4 5   |     |
| 1 3 | 2   | 3   | 1   | 4     | 9     | 1     | 1 3   | 1   |
|     |     |     | 7 8 | 5 6   | 8     | 5 6   | 5 8   | 8   |

|       |       |       |       |       |     |       |       |     |
|-------|-------|-------|-------|-------|-----|-------|-------|-----|
| 8     | 4     | 4     | 3     | 3     | 2   | 1     | 3     |     |
|       | 7 9   | 9     | 7     | 6     | 4 5 | 4 5 6 | 5 6   |     |
| 1 2 3 | 2     | 1 2 3 | 3     | 3     | 9   | 4 5 6 | 4 5 6 | 5 6 |
| 4     | 4     | 4     | 7 8   | 7 8   |     | 8     | 7 8   |     |
| 4     | 3     | 6     | 5     | 1     | 3   | 4     | 2     |     |
| 7 9   |       |       |       | 7 8   | 7 8 | 8     | 7 8 9 |     |
| 1 2   | 2     | 1 2   | 5     |       | 2   | 2     | 6     | 3   |
| 4 6   | 4     | 4     | 7 8 9 | 7 8   | 7 8 | 4 8   | 4 6   |     |
| 2     | 3     | 4     |       | 6     | 1   | 4 5   | 4 5   | 5   |
| 4 5   |       | 9     | 7 8 9 | 7 8 9 |     | 7 8 9 | 7 8 9 |     |
| 2     | 8     | 7     | 4     | 3     | 2 3 | 2     | 5 6   | 1   |
| 5 6   |       |       |       | 9     |     | 5 6   | 9     |     |
|       | 1     |       | 2     | 4     | 5   | 3     | 5 6   | 5 6 |
| 7 9   |       | 8 9   | 7 8   |       | 7 8 | 8     | 8     |     |
| 2 3   | 2     | 2 3   | 3     | 1     | 6   | 9     | 5     | 4   |
| 7     | 7     | 8     | 7 8   |       |     | 8     | 8     |     |
| 4     | 3     | 4     | 3     | 3     | 3   | 7     | 1     | 2   |
|       | 6 4 5 | 4 6   | 8 9   | 5 8 9 | 5 8 |       |       |     |

|                               |                                   |                               |                           |                               |                                 |                                 |                                 |                             |
|-------------------------------|-----------------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------|
| 1                             | <sup>3</sup> <sub>6 9</sub>       | 2                             | 5                         | <sup>4</sup> <sub>6 9</sub>   | <sup>4</sup> <sub>6 9</sub>     | <sup>4</sup> <sub>6 9</sub>     | 7                               | 8                           |
| <sup>5</sup> <sub>7 8 9</sub> | 4                                 | <sup>5</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>3</sub> | <sup>6</sup> <sub>9</sub>     | <sup>2</sup> <sub>6 9</sub>     | <sup>1 2 3</sup> <sub>5 6</sub> | <sup>3</sup> <sub>5 6 9</sub>   | <sup>1 2</sup> <sub>6</sub> |
| <sup>3</sup> <sub>5 7 9</sub> | <sup>3</sup> <sub>5 6 7 9</sub>   | <sup>3</sup> <sub>5 6 7</sub> | <sup>2</sup> <sub>3</sub> | 8                             | 1                               | <sup>2 3</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>4 5 6 9</sub> | <sup>2</sup> <sub>4 6</sub> |
| <sup>5</sup> <sub>7</sub>     | <sup>1 2 3</sup> <sub>4 5 7</sub> | <sup>1</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>8</sub>     | <sup>4 5 6</sup> <sub>4 6</sub> | <sup>2</sup> <sub>7 8</sub>     | <sup>4 5 6</sup> <sub>8</sub>   | 9                           |
| <sup>5</sup> <sub>7 9</sub>   | 8                                 | <sup>4 5</sup> <sub>7</sub>   | <sup>4</sup> <sub>2</sub> | <sup>4 5 6</sup> <sub>9</sub> | <sup>4</sup> <sub>2 6 9</sub>   | <sup>2</sup> <sub>4 5 6 7</sub> | 1                               | 3                           |
| 6                             | <sup>1 2 3</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>4 5 9</sub> | 7                               | <sup>2</sup> <sub>4 5 8</sub>   | <sup>4 5</sup> <sub>8</sub>     | <sup>2</sup> <sub>4</sub>   |
| 2                             | <sup>1</sup> <sub>7</sub>         | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>6</sub> | <sup>3</sup> <sub>7</sub>     | 6                               | <sup>4</sup> <sub>7</sub>       | 8                               | <sup>3</sup> <sub>4</sub>   |
| 4                             | <sup>3</sup> <sub>7</sub>         | <sup>6</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>6</sub> | 9                             | 2                               | 5                               | <sup>1</sup> <sub>8</sub>       | <sup>3</sup> <sub>6 7</sub> |
| <sup>5</sup> <sub>7 8</sub>   | <sup>5 6</sup> <sub>7</sub>       | 9                             | <sup>4</sup> <sub>7</sub> | 1                             | 3                               | <sup>4</sup> <sub>8</sub>       | 2                               | <sup>4</sup> <sub>6 7</sub> |

|                                 |                                 |                               |                               |                             |                             |                             |                               |                                 |
|---------------------------------|---------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------------------|
| <sup>1</sup> <sub>4 5 8</sub>   | <sup>1</sup> <sub>4 5 8</sub>   | 7                             | 6                             | <sup>4 5</sup> <sub>8</sub> | 2                           | 3                           | <sup>1</sup> <sub>5 8 9</sub> | <sup>1</sup> <sub>5 8 9</sub>   |
| 9                               | 3                               | <sup>2</sup> <sub>8</sub>     | <sup>1</sup> <sub>4</sub>     | <sup>4 5</sup> <sub>8</sub> | <sup>1</sup> <sub>4</sub>   | <sup>4</sup> <sub>6</sub>   | <sup>5 6</sup> <sub>7 8</sub> | <sup>2</sup> <sub>5 6 7 8</sub> |
| <sup>1 2</sup> <sub>4 5 8</sub> | <sup>1 2</sup> <sub>4 5 8</sub> | 6                             | 7                             | 9                           | 3                           | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>5 8</sub>   | <sup>1 2</sup> <sub>5 8</sub>   |
| <sup>1 2</sup> <sub>8</sub>     | 6                               | <sup>1 2</sup> <sub>8 9</sub> | 3                             | <sup>2</sup> <sub>7</sub>   | <sup>1</sup> <sub>4</sub>   | 5                           | <sup>1</sup> <sub>4 7 9</sub> | <sup>1</sup> <sub>7 9</sub>     |
| 7                               | <sup>1 2</sup> <sub>9</sub>     | 5                             | <sup>1</sup> <sub>4</sub>     | <sup>2</sup> <sub>9</sub>   | <sup>1</sup> <sub>6 4</sub> | 8                           | <sup>1</sup> <sub>4 6 9</sub> | <sup>3</sup> <sub>1 3 6 9</sub> |
| 3                               | <sup>1</sup> <sub>8 9</sub>     | 4                             | <sup>1</sup> <sub>8 9 7</sub> | <sup>6</sup> <sub>5</sub>   | <sup>1</sup> <sub>6 9</sub> | 2                           | <sup>1</sup> <sub>7 6 9</sub> |                                 |
| <sup>2</sup> <sub>4 5 8</sub>   | <sup>2</sup> <sub>4 5 8 9</sub> | <sup>2</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>4 8 9</sub> | 1                           | 6                           | 7                           | <sup>3</sup> <sub>5 8 9</sub> | <sup>3</sup> <sub>5 8 9</sub>   |
| <sup>1 2</sup> <sub>5 6 8</sub> | 7                               | <sup>1 2</sup> <sub>8 9</sub> | 2                             | 3                           | <sup>1</sup> <sub>8 9</sub> | <sup>1</sup> <sub>6 9</sub> | <sup>5 6</sup> <sub>8 9</sub> | 4                               |
| <sup>1</sup> <sub>4 8</sub>     | <sup>1</sup> <sub>4 8 9</sub>   | 3                             | 5                             | <sup>4</sup> <sub>8</sub>   | 7                           | 2                           | <sup>1</sup> <sub>6 8 9</sub> | <sup>1</sup> <sub>6 8 9</sub>   |

|                                       |                                 |                                 |                               |                             |                               |                                 |                                 |                                 |
|---------------------------------------|---------------------------------|---------------------------------|-------------------------------|-----------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|
| <sup>1 2 3</sup> <sub>9 7 9</sub>     | <sup>2 3</sup> <sub>7 9</sub>   | 4                               | <sup>5</sup> <sub>7 9</sub>   | 8                           | <sup>5</sup> <sub>7 9</sub>   | <sup>1 2 3</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>7 9</sub>   | 6                               |
| <sup>1 2 3</sup> <sub>8 9 7 8 9</sub> | <sup>2 3</sup> <sub>7 8 9</sub> | 6                               | 4                             | <sup>2</sup> <sub>7 9</sub> | <sup>3</sup> <sub>7 9</sub>   | <sup>1 2 3</sup> <sub>7</sub>   | <sup>1 2 3</sup> <sub>7 9</sub> | 5                               |
| <sup>2 3</sup> <sub>9</sub>           | 5                               | <sup>2 3</sup> <sub>7</sub>     | 6                             | <sup>2</sup> <sub>7 9</sub> | 1                             | 8                               | 4                               | <sup>2 3</sup> <sub>7 9</sub>   |
| <sup>2 3</sup> <sub>4 5</sub>         | 1                               | <sup>2 3</sup> <sub>5</sub>     | <sup>5</sup> <sub>7 9</sub>   | 6                           | <sup>2</sup> <sub>7 9</sub>   | <sup>4 5</sup> <sub>7</sub>     | <sup>2</sup> <sub>7 9</sub>     | 8                               |
| 6                                     | <sup>2</sup> <sub>8</sub>       | 9                               | <sup>5</sup> <sub>7 8</sub>   | 1                           | 4                             | <sup>2</sup> <sub>7 5</sub>     | 3                               | <sup>2</sup> <sub>7</sub>       |
| 7                                     | <sup>2</sup> <sub>4 8</sub>     | <sup>2</sup> <sub>5 8</sub>     | <sup>5</sup> <sub>8 9</sub>   | 3                           | <sup>2</sup> <sub>5 8 9</sub> | <sup>1 2</sup> <sub>4 5</sub>   | <sup>1 2</sup> <sub>6 4</sub>   | <sup>9</sup> <sub>9</sub>       |
| <sup>3</sup> <sub>5 7</sub>           | <sup>3</sup> <sub>7</sub>       | <sup>1</sup> <sub>5</sub>       | 2                             | 4                           | 6                             | 9                               | 8                               | <sup>1</sup> <sub>5 7</sub>     |
| <sup>2 3</sup> <sub>4 8 9</sub>       | 6                               | <sup>1 2 3</sup> <sub>7 8</sub> | <sup>3</sup> <sub>7 8 9</sub> | 5                           | <sup>3</sup> <sub>7 8 9</sub> | <sup>1 2 3</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>7</sub>     | <sup>1 2 3</sup> <sub>7</sub>   |
| <sup>4 5</sup> <sub>8 9</sub>         | <sup>4</sup> <sub>7 8 9</sub>   | <sup>2 3</sup> <sub>7 8</sub>   | 1                             | <sup>3</sup> <sub>7 9</sub> | <sup>3</sup> <sub>7 8 9</sub> | 6                               | <sup>2</sup> <sub>4 5 7</sub>   | <sup>2 3</sup> <sub>4 5 7</sub> |

|                               |                               |                                 |                               |                             |                               |                                   |                                   |                               |
|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------------------------|
| <sup>1</sup> <sub>9</sub>     | 3                             | 2                               | 4                             | <sup>1</sup> <sub>7 8</sub> | <sup>1</sup> <sub>6 9</sub>   | <sup>6</sup> <sub>8 9</sub>       | 5                                 | <sup>7 8 9</sup> <sub>9</sub> |
| 8                             | <sup>4 5</sup> <sub>7 9</sub> | <sup>1</sup> <sub>4 5 7 9</sub> | <sup>3</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>6</sub>   | <sup>1</sup> <sub>6 9</sub>   | 2                                 | <sup>4</sup> <sub>7 9</sub>       | <sup>3</sup> <sub>4 9</sub>   |
| <sup>4 5</sup> <sub>9</sub>   | 6                             | <sup>4 5</sup> <sub>7 9</sub>   | <sup>2 3</sup> <sub>7 9</sub> | <sup>2</sup> <sub>8</sub>   | <sup>2 3</sup> <sub>9</sub>   | <sup>4</sup> <sub>8 9 7 8 9</sub> | 1                                 |                               |
| 2                             | 1                             | <sup>3</sup> <sub>9</sub>       | 6                             | 4                           | 7                             | <sup>5</sup> <sub>8 9</sub>       | <sup>3</sup> <sub>8 9</sub>       | <sup>3</sup> <sub>5 8 9</sub> |
| <sup>4</sup> <sub>9</sub>     | <sup>3</sup> <sub>7 6</sub>   | <sup>3</sup> <sub>8 9</sub>     | <sup>5</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>3 4</sub> | <sup>3</sup> <sub>9</sub>     | 2                                 | <sup>4</sup> <sub>9</sub>         | <sup>3</sup> <sub>9</sub>     |
| <sup>4 5</sup> <sub>9</sub>   | 8                             | <sup>4 5</sup> <sub>9</sub>     | <sup>2 3</sup> <sub>9</sub>   | <sup>1 2</sup> <sub>9</sub> | <sup>1 2 3</sup> <sub>9</sub> | 7                                 | <sup>1</sup> <sub>4 9</sub>       | 6                             |
| <sup>1</sup> <sub>4 5 6</sub> | <sup>2</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>4 5</sub>     | <sup>3</sup> <sub>7 8</sub>   | 9                           | <sup>2</sup> <sub>4 8</sub>   | <sup>1</sup> <sub>4 5 6 7 8</sub> | <sup>1</sup> <sub>4 6 4 5 8</sub> | <sup>2</sup> <sub>4 5 8</sub> |
| <sup>4</sup> <sub>6 4</sub>   | <sup>2</sup> <sub>8</sub>     | 1                               | <sup>2</sup> <sub>7 6</sub>   | 5                           | <sup>4</sup> <sub>9</sub>     | 3                                 | <sup>4</sup> <sub>7 9</sub>       | <sup>2</sup> <sub>4 5 8</sub> |
| 7                             | 9                             | <sup>1</sup> <sub>4 5</sub>     | 2                             | 3                           | <sup>2</sup> <sub>4 6 8</sub> | <sup>1</sup> <sub>4 5 6 8</sub>   | <sup>1</sup> <sub>6 8</sub>       | <sup>2</sup> <sub>4 5 8</sub> |

|                             |                               |                               |                                 |                                 |                               |                                 |                               |                               |
|-----------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|
| <sup>5 6</sup> <sub>9</sub> | <sup>4 5</sup> <sub>9</sub>   | <sup>4 5 6</sup> <sub>7</sub> | <sup>2 3</sup> <sub>5 6</sub>   | 8                               | 1                             | <sup>2 3</sup> <sub>4</sub>     | 7                             | <sup>2</sup> <sub>5</sub>     |
| 1                           | 3                             | <sup>4 5 6</sup> <sub>7</sub> | <sup>2</sup> <sub>5 6 7</sub>   | <sup>2</sup> <sub>4 7</sub>     | <sup>2</sup> <sub>6 7</sub>   | <sup>2</sup> <sub>4 8 9</sub>   | <sup>2</sup> <sub>5 8 9</sub> | <sup>2</sup> <sub>5 8 9</sub> |
| 8                           | 2                             | <sup>4 5 6</sup> <sub>7</sub> | <sup>5 6</sup> <sub>7</sub>     | <sup>4</sup> <sub>6 7</sub>     | 9                             | <sup>3</sup> <sub>4 6</sub>     | 1                             |                               |
| <sup>2</sup> <sub>7 9</sub> | <sup>1</sup> <sub>7 9</sub>   | <sup>2 3</sup> <sub>6</sub>   | 4                               | <sup>1 2 3</sup> <sub>7 6</sub> | 5                             | <sup>1</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>8 9</sub>   |
| <sup>5 6</sup> <sub>9</sub> | <sup>1</sup> <sub>4 5 9</sub> | <sup>4 5 6</sup> <sub>8</sub> | <sup>1</sup> <sub>8</sub>       | <sup>3</sup> <sub>6 8</sub>     | <sup>3</sup> <sub>6 8</sub>   | <sup>1</sup> <sub>4 9</sub>     | 2                             | 7                             |
| <sup>2</sup> <sub>7</sub>   | <sup>1</sup> <sub>4 7</sub>   | 8                             | <sup>1 2 3</sup> <sub>7</sub>   | 9                               | <sup>2 3</sup> <sub>7</sub>   | <sup>1</sup> <sub>4</sub>       | <sup>3</sup> <sub>6</sub>     | 6                             |
| <sup>2 3</sup> <sub>7</sub> | <sup>7 8</sup> <sub>7 8</sub> | 1                             | <sup>2 3</sup> <sub>7 8 9</sub> | 5                               | 4                             | 6                               | <sup>8 9</sup> <sub>8 9</sub> | <sup>2</sup> <sub>8 9</sub>   |
| <sup>2 3</sup> <sub>7</sub> | <sup>5</sup> <sub>7 8</sub>   | 9                             | <sup>1 2 3</sup> <sub>7 8</sub> | <sup>1 2 3</sup> <sub>7 8</sub> | <sup>2 3</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>5 8</sub>   | 4                             |
| 4                           | 6                             | <sup>2</sup> <sub>5</sub>     | <sup>1 2</sup> <sub>7 8 9</sub> | <sup>1 2</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>7 8</sub>   | <sup>1 2</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>5 8 9</sub> | 3                             |

|                             |                                 |                               |                               |                                 |                               |                               |                               |                                 |
|-----------------------------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|
| <sup>4</sup> <sub>2 3</sub> | <sup>1 2 3</sup> <sub>8</sub>   | <sup>1 2</sup> <sub>4 8</sub> | <sup>2 3</sup> <sub>5</sub>   | 7                               | <sup>1 2</sup> <sub>4</sub>   | 9                             | <sup>1</sup> <sub>5 8</sub>   | 6                               |
| 7                           | <sup>1 2 3</sup> <sub>8</sub>   | 5                             | <sup>2 3</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>6</sub>     | 9                             | <sup>2 3</sup> <sub>8</sub>   | <sup>1</sup> <sub>3</sub>     | <sup>3</sup> <sub>1 3</sub>     |
| 9                           | <sup>1 2 3</sup> <sub>6 4</sub> | <sup>1 2</sup> <sub>6 4</sub> | <sup>2 3</sup> <sub>5 6</sub> | <sup>1 2</sup> <sub>4 5 6</sub> | 8                             | <sup>2 3</sup> <sub>5</sub>   | <sup>1</sup> <sub>5</sub>     | <sup>3</sup> <sub>1 5</sub>     |
| <sup>4</sup> <sub>2 3</sub> | <sup>1 2 3</sup> <sub>5</sub>   | 9                             | <sup>2</sup> <sub>7 8</sub>   | <sup>1 2</sup> <sub>4 5</sub>   | <sup>1 2</sup> <sub>4 7</sub> | 6                             | <sup>1</sup> <sub>5 8</sub>   | <sup>1</sup> <sub>4 5 7</sub>   |
| 8                           | 7                               | <sup>1</sup> <sub>4</sub>     | <sup>5 6</sup> <sub>9</sub>   | <sup>5 6</sup> <sub>9</sub>     | <sup>1</sup> <sub>4</sub>     | <sup>5</sup> <sub>3</sub>     | 2                             | <sup>3</sup> <sub>5 9</sub>     |
| <sup>4</sup> <sub>2</sub>   | <sup>1 2</sup> <sub>5</sub>     | 6                             | <sup>2</sup> <sub>7 8 9</sub> | <sup>1 2</sup> <sub>4 5 9</sub> | 3                             | <sup>4 5</sup> <sub>7 8</sub> | <sup>1</sup> <sub>5 8 9</sub> | <sup>1</sup> <sub>4 5 7 9</sub> |
| 6                           | <sup>2</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>7 8</sub>   | 1                             | <sup>3</sup> <sub>8</sub>       | 5                             | <sup>4</sup> <sub>7</sub>     | <sup>3</sup> <sub>9 7 9</sub> | <sup>3</sup> <sub>3</sub>       |
| 1                           | <sup>8 9</sup> <sub>7 8</sub>   | 4                             | <sup>8</sup> <sub>7</sub>     | <sup>3</sup> <sub>8</sub>       | 6                             | <sup>5</sup> <sub>7</sub>     | <sup>3</sup> <sub>5 9</sub>   | 2                               |
| 5                           | 4                               | 3                             | <sup>2</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>9 7</sub>     | <sup>2</sup> <sub>9 7</sub>   | 1                             | 6                             | 8                               |

|                             |                                 |                               |                                 |                             |                               |                               |                               |                               |
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| 8                           | <sup>1 2</sup> <sub>4 5 6</sub> | <sup>1 2</sup> <sub>4 7</sub> | <sup>1 2</sup> <sub>4 5 6</sub> | 3                           | <sup>1 4</sup> <sub>5 7</sub> | <sup>1 4</sup> <sub>5 7</sub> | <sup>2</sup> <sub>7 9</sub>   | <sup>1 2</sup> <sub>4 7</sub> |
| <sup>1</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>4 5 7</sub> | <sup>1 2</sup> <sub>4 7</sub> | <sup>1 4</sup> <sub>5 7</sub>   | 9                           | 8                             | <sup>1 3</sup> <sub>4 7</sub> | <sup>2 3</sup> <sub>7</sub>   | 6                             |
| 9                           | <sup>1 3</sup> <sub>4 7</sub>   | <sup>1 3</sup> <sub>4 7</sub> | <sup>1 4</sup> <sub>5 7</sub>   | 6                           | 2                             | 5                             | 8                             | <sup>1 4</sup> <sub>7</sub>   |
| 5                           | <sup>2 3</sup> <sub>4 6</sub>   | <sup>2 3</sup> <sub>4 6</sub> | 9                               | <sup>2</sup> <sub>4</sub>   | <sup>3</sup> <sub>4 6</sub>   | 7                             | 1                             | 8                             |
| <sup>1</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>6 8</sub>   | <sup>1 2</sup> <sub>6 8</sub> | <sup>1 2</sup> <sub>5 6</sub>   | 7                           | <sup>1 5</sup> <sub>6</sub>   | 9                             | 4                             | 3                             |
| <sup>1 3</sup> <sub>7</sub> | <sup>1 3</sup> <sub>4 7</sub>   | 9                             | <sup>1 3</sup> <sub>4</sub>     | 8                           | <sup>1 3</sup> <sub>4</sub>   | 2                             | 6                             | 5                             |
| 4                           | <sup>1 3</sup> <sub>7 8</sub>   | <sup>1 3</sup> <sub>7 8</sub> | <sup>2 3</sup> <sub>6 7</sub>   | <sup>1 2</sup> <sub>6</sub> | 9                             | <sup>1 3</sup> <sub>6</sub>   | 5                             | <sup>1 2</sup> <sub>7</sub>   |
| <sup>1 3</sup> <sub>7</sub> | <sup>1 3</sup> <sub>6 7</sub>   | <sup>1 3</sup> <sub>6 7</sub> | <sup>2 3</sup> <sub>4 7</sub>   | 5                           | <sup>3</sup> <sub>4 7</sub>   | 8                             | <sup>2 3</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>4 7</sub> |
| 2                           | <sup>1 3</sup> <sub>7</sub>     | 5                             | 8                               | <sup>1 4</sup> <sub>7</sub> | <sup>3</sup> <sub>4 6</sub>   | <sup>1 3</sup> <sub>4 6</sub> | <sup>3 1</sup> <sub>7 9</sub> | 9                             |

|                               |                             |                             |                             |                             |                             |                               |                               |                               |
|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|
| 1                             | <sup>3</sup> <sub>7</sub>   | 2                           | 5                           | 4                           | 8                           | 6                             | 9                             | <sup>3</sup> <sub>7</sub>     |
| 8                             | <sup>3</sup> <sub>7 6</sub> | 5                           | <sup>3</sup> <sub>7 9</sub> | <sup>6</sup> <sub>7 9</sub> | <sup>1 6</sup> <sub>7</sub> | <sup>1 3</sup> <sub>7</sub>   | 2                             | 4                             |
| <sup>4</sup> <sub>9 7</sub>   | <sup>3</sup> <sub>6 4</sub> | <sup>2 3</sup> <sub>7</sub> | <sup>2</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>7</sub> | 5                           | 8                             | <sup>1 3</sup> <sub>7</sub>   |                               |
| <sup>2 3</sup> <sub>7 5</sub> | 1                           | <sup>3</sup> <sub>7</sub>   | <sup>2</sup> <sub>9</sub>   | <sup>2</sup> <sub>5 9</sub> | 4                           | <sup>2</sup> <sub>7</sub>     | 6                             | 8                             |
| 6                             | <sup>2</sup> <sub>5</sub>   | 8                           | 1                           | 7                           | <sup>2</sup> <sub>5</sub>   | <sup>3</sup> <sub>9</sub>     | 4                             | <sup>3</sup> <sub>9</sub>     |
| <sup>2</sup> <sub>7 9</sub>   | 4                           | <sup>7 9</sup>              | 6                           | 8                           | 3                           | <sup>1 2</sup> <sub>7</sub>   | <sup>1 5</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>5</sub>   |
| <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>5 8</sub> | <sup>1</sup> <sub>6</sub>   | 4                           | 3                           | <sup>2</sup> <sub>6</sub>   | <sup>1 2</sup> <sub>8 9</sub> | 7                             | <sup>1 2</sup> <sub>6 9</sub> |
| <sup>3</sup> <sub>7</sub>     | <sup>2</sup> <sub>8 7</sub> | <sup>1 3</sup> <sub>6</sub> | <sup>2</sup> <sub>7 8</sub> | <sup>2</sup> <sub>5 6</sub> | 9                           | <sup>1 3</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>5 6</sub> |                               |
| <sup>4</sup> <sub>7</sub>     | <sup>3</sup> <sub>9</sub>   | <sup>3</sup> <sub>4 6</sub> | <sup>2</sup> <sub>7 8</sub> | 1                           | <sup>2</sup> <sub>5 6</sub> | <sup>2</sup> <sub>8</sub>     | <sup>3</sup> <sub>5</sub>     | <sup>2</sup> <sub>5 6</sub>   |

|                                 |                                   |                               |                               |                             |                               |                                   |                             |                               |
|---------------------------------|-----------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------|-------------------------------|
| <sup>2 3</sup> <sub>7 8 9</sub> | <sup>1 3</sup> <sub>6 7 8 9</sub> | 5                             | 4                             | <sup>1 6</sup> <sub>7</sub> | <sup>1 2</sup> <sub>9</sub>   | <sup>1 2 3</sup> <sub>6 8 9</sub> | <sup>1 3</sup> <sub>9</sub> | <sup>1 2</sup> <sub>6</sub>   |
| <sup>2 3</sup> <sub>6 9</sub>   | 4                                 | <sup>1 6</sup> <sub>9</sub>   | <sup>2 6</sup> <sub>9</sub>   | 8                           | 5                             | 7                                 | <sup>1 3</sup> <sub>9</sub> | <sup>1 2</sup> <sub>6</sub>   |
| <sup>2 6</sup> <sub>7 8 9</sub> | <sup>1 6</sup> <sub>7 8 9</sub>   | <sup>1 6</sup> <sub>7 8</sub> | <sup>2 6</sup> <sub>7 9</sub> | <sup>1 6</sup> <sub>7</sub> | 3                             | <sup>1 2</sup> <sub>4 8 9</sub>   | <sup>1 4</sup> <sub>9</sub> | 5                             |
| <sup>4 5</sup> <sub>7</sub>     | <sup>5</sup> <sub>7</sub>         | 3                             | 1                             | 2                           | 6                             | <sup>4 5</sup> <sub>7</sub>       | 8                           | 9                             |
| 1                               | <sup>5 6</sup> <sub>9</sub>       | 2                             | 8                             | <sup>5 9</sup>              | 4                             | <sup>3 5</sup> <sub>7</sub>       | <sup>5 3</sup> <sub>7</sub> | <sup>6</sup> <sub>7</sub>     |
| <sup>4 5 6</sup> <sub>8 9</sub> | <sup>5 6</sup> <sub>8 9</sub>     | <sup>4 6</sup> <sub>8</sub>   | 3                             | <sup>5 9</sup>              | 7                             | <sup>1 4 5 6</sup>                | 2                           | <sup>1 4</sup> <sub>6</sub>   |
| <sup>5 6</sup> <sub>7 8</sub>   | <sup>5 6</sup> <sub>7 8</sub>     | 9                             | <sup>2 6</sup> <sub>7</sub>   | 4                           | <sup>1 2</sup> <sub>8</sub>   | <sup>1 2</sup> <sub>5 7</sub>     | <sup>1 5</sup>              | 3                             |
| <sup>4 5</sup> <sub>7 8</sub>   | <sup>3 1</sup> <sub>7 8</sub>     | <sup>3 1</sup> <sub>7 8</sub> | <sup>2 1</sup> <sub>7 9</sub> | <sup>3 1</sup> <sub>7</sub> | <sup>1 2</sup> <sub>8 9</sub> | <sup>1 2</sup> <sub>4 5 9</sub>   | 6                           | <sup>1 2</sup> <sub>4 7</sub> |
| <sup>4 6</sup> <sub>7</sub>     | <sup>1 4</sup> <sub>7</sub>       | 2                             | 5                             | <sup>1 3</sup> <sub>6</sub> | <sup>1</sup> <sub>9</sub>     | <sup>1 4</sup> <sub>9 7</sub>     | <sup>1</sup> <sub>9</sub>   | 8                             |

|                               |                                 |                                   |                                   |                                 |                                 |                                 |                               |                               |
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| 1                             | <sup>2 5</sup> <sub>8 9</sub>   | 4                                 | 3                                 | <sup>2 5 6</sup> <sub>9</sub>   | 7                               | <sup>6</sup> <sub>8 9</sub>     | <sup>6</sup> <sub>8</sub>     | <sup>5 6</sup> <sub>9</sub>   |
| <sup>2 6</sup> <sub>8 9</sub> | <sup>2 5</sup> <sub>7 8 9</sub> | <sup>2 5 6</sup> <sub>7 8</sub>   | <sup>1 2</sup> <sub>4 5 9</sub>   | <sup>2 4 5 6</sup> <sub>9</sub> | <sup>1 2</sup> <sub>4 5 6</sub> | 3                               | <sup>4 6</sup> <sub>7 8</sub> | <sup>4 5 6</sup> <sub>9</sub> |
| <sup>6 5</sup> <sub>9 7</sub> | <sup>3 5 6</sup> <sub>9 7</sub> | <sup>3 5 6</sup> <sub>4 5 9</sub> | 8                                 | <sup>4 5 6</sup> <sub>9</sub>   | 2                               | <sup>4 6</sup> <sub>7</sub>     | 1                             |                               |
| 4                             | 1                               | <sup>2 3</sup> <sub>5 8</sub>     | 6                                 | <sup>2 5</sup> <sub>8</sub>     | <sup>2 5 8</sup>                | 7                               | 9                             | <sup>2 3</sup> <sub>6</sub>   |
| <sup>2 6</sup> <sub>8</sub>   | <sup>2 8</sup>                  | 9                                 | 7                                 | 3                               | <sup>1 2</sup> <sub>4 8</sub>   | 5                               | <sup>1 2</sup> <sub>4 6</sub> | <sup>2 6</sup> <sub>4</sub>   |
| 7                             | <sup>2 3</sup> <sub>5</sub>     | <sup>2 3</sup> <sub>5 6</sub>     | <sup>1 2</sup> <sub>4 5</sub>     | <sup>2 4 5</sup>                | 9                               | <sup>1 2 3</sup> <sub>4 6</sub> | 8                             |                               |
| <sup>2 8 9</sup>              | 6                               | 1                                 | <sup>2 8 9</sup>                  | 7                               | <sup>2 3</sup> <sub>4</sub>     | <sup>4 8 9</sup>                | 5                             | <sup>2 3</sup> <sub>4</sub>   |
| 3                             | <sup>2 7 8 9</sup>              | <sup>2 7 8</sup>                  | <sup>2 4 5 6</sup> <sub>8 9</sub> | <sup>2 4 5 6</sup> <sub>9</sub> | <sup>2 4 5 6</sup>              | 1                               | <sup>2 6</sup> <sub>4 8</sub> | <sup>2 6</sup> <sub>4 9</sub> |
| 5                             | <sup>2 8 9</sup>                | <sup>2 8</sup>                    | <sup>2 4 8 9</sup>                | 1                               | <sup>2 3</sup> <sub>4 6</sub>   | <sup>4 8 9</sup>                | <sup>2 3</sup> <sub>4 8</sub> | 7                             |

|                               |                               |                                 |                               |                                 |                               |                                   |                                 |                               |
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| <sup>1 6</sup> <sub>8</sub>   | <sup>1 2</sup> <sub>4 6</sub> | 3                               | <sup>4 7</sup>                | <sup>4 5</sup> <sub>7 8</sub>   | <sup>5</sup> <sub>7</sub>     | <sup>1 2</sup> <sub>4 6</sub>     | 9                               | <sup>1 4</sup> <sub>7 8</sub> |
| <sup>1 6</sup> <sub>8</sub>   | 5                             | <sup>1 4</sup> <sub>6</sub>     | 2                             | <sup>4 7 8 9</sup>              | <sup>7 9</sup>                | <sup>1 3</sup> <sub>4 6 7 8</sub> | <sup>1 3</sup> <sub>4 7 8</sub> |                               |
| <sup>8 9</sup>                | <sup>2</sup> <sub>4 9</sub>   | 7                               | 3                             | 6                               | 1                             | <sup>2 4 5<sub>8</sub></sup>      | <sup>2 4 5 8</sup>              |                               |
| 3                             | <sup>6 9</sup> <sub>8 9</sub> | <sup>2 6</sup> <sub>4 6 9</sub> | <sup>4 5 9</sup>              | <sup>2 5 6 9</sup>              | 7                             | 1                                 | <sup>4 5 8 9</sup>              |                               |
| 4                             | <sup>1 6</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>6 9</sub>   | <sup>1 6</sup> <sub>7 9</sub> | <sup>5 9</sup>                  | 8                             | <sup>2 3</sup> <sub>5 9</sub>     | <sup>2 5 9</sup>                |                               |
| 5                             | <sup>1 7 9</sup>              | <sup>1 2</sup> <sub>8 9</sub>   | <sup>1 4</sup> <sub>7 9</sub> | 3                               | <sup>2 7 9</sup>              | <sup>2 4 8 9</sup>                | 6                               |                               |
| <sup>1 6</sup> <sub>7 9</sub> | <sup>1 4</sup> <sub>6 9</sub> | <sup>1 4</sup> <sub>6 9</sub>   | 5                             | <sup>7 9</sup>                  | <sup>7 9</sup>                | 8                                 | 3                               | 2                             |
| <sup>6 9</sup> <sub>7</sub>   | 8                             | 5                               | <sup>6 9</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>4 6 9</sub> | <sup>1 4</sup> <sub>6 9</sub> | <sup>1 4</sup> <sub>6 4</sub>     | <sup>1 9</sup>                  |                               |
| 2                             | 3                             | <sup>6 9</sup>                  | 8                             | 1                               | 4                             | <sup>5 6</sup> <sub>7 9</sub>     | <sup>5 6</sup> <sub>7 9</sub>   | <sup>5 9</sup>                |

|                               |                                 |                               |                                 |                                   |                                 |                                 |                                 |                                 |
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| <sup>4 5 6</sup> <sub>7</sub> | <sup>1 2</sup> <sub>5 6</sub>   | 3                             | <sup>1 2</sup> <sub>5 6</sub>   | <sup>1 2</sup> <sub>4 5 6</sub>   | <sup>1 2</sup> <sub>4 6</sub>   | <sup>1 5</sup> <sub>9</sub>     | 8                               | <sup>4 5</sup> <sub>7 9</sub>   |
| 9                             | <sup>5</sup> <sub>7</sub>       | <sup>1 4</sup>                | 3                               | 8                                 | <sup>1 4</sup>                  | 6                               | 2                               | <sup>5 7</sup>                  |
| 8                             | <sup>1 2</sup> <sub>5 6 7</sub> | <sup>1 2</sup> <sub>4 6</sub> | 9                               | <sup>1 2</sup> <sub>4 5 6 7</sub> | <sup>1 2</sup> <sub>4 6</sub>   | <sup>1 3</sup> <sub>5 7</sub>   | <sup>3 1</sup> <sub>4 5 7</sub> | <sup>3</sup> <sub>7</sub>       |
| 7                             | 8                               | <sup>1 9</sup>                | 4                               | <sup>1 2</sup> <sub>5 9</sub>     | <sup>1 2</sup> <sub>9</sub>     | <sup>1 2 3</sup> <sub>5 9</sub> | <sup>3 5</sup> <sub>9</sub>     | 6                               |
| <sup>1 6</sup>                | 4                               | <sup>1 6</sup>                | <sup>1 2</sup> <sub>5 8 9</sub> | <sup>1 2</sup> <sub>5 9</sub>     | 3                               | 7                               | <sup>1 2</sup> <sub>5 9</sub>   | <sup>1 2</sup> <sub>5 8 9</sub> |
| 2                             | 3                               | 5                             | <sup>1 8 9</sup>                | <sup>1 6 9</sup>                  | 7                               | <sup>1 8 9</sup>                | <sup>1 4 8 9</sup>              |                                 |
| <sup>1 4 5 6</sup>            | <sup>1 2</sup> <sub>5 6 9</sub> | 8                             | <sup>1 2</sup> <sub>6 7</sub>   | 3                                 | <sup>1 2</sup> <sub>4 6 9</sub> | <sup>2 5 9</sup>                | <sup>5 6</sup> <sub>7 9</sub>   | <sup>2 5</sup> <sub>7 9</sub>   |
| <sup>4 6</sup> <sub>7</sub>   | <sup>2 6 9</sup>                | <sup>2 6 4</sup>              | <sup>2 6 7 9</sup>              | 5                                 | <sup>2 3</sup> <sub>8 9</sub>   | 1                               | <sup>7 8 9</sup>                | <sup>2 3</sup> <sub>5 9</sub>   |
| <sup>1 3</sup> <sub>5 6</sub> | <sup>1 2</sup> <sub>5 6 9</sub> | 7                             | <sup>1 2</sup> <sub>6</sub>     | <sup>1 2</sup> <sub>6 9</sub>     | 8                               | 4                               | <sup>3 5 6</sup> <sub>9</sub>   | <sup>2 3</sup> <sub>5 9</sub>   |

|                             |                             |                               |                             |                               |                                 |                               |                                   |                               |
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| 6                           | <sup>5</sup> <sub>7 9</sub> | 1                             | 4                           | 2                             | <sup>3</sup> <sub>5 9</sub>     |                               | <sup>3</sup> <sub>5 8 9</sub>     | <sup>3</sup> <sub>5 7</sub>   |
| <sup>5</sup> <sub>9 7</sub> |                             | 3                             | 6                           | <sup>5</sup> <sub>8 9</sub>   | <sup>5</sup> <sub>8 9</sub>     |                               | 4                                 | <sup>1</sup> <sub>2 7</sub>   |
| 4                           | <sup>2</sup> <sub>5 9</sub> | 8                             | 7                           | 1                             | <sup>3</sup> <sub>5 9</sub>     | <sup>2</sup> <sub>6 9</sub>   | <sup>2 3</sup> <sub>5 6 9</sub>   | <sup>2 3</sup> <sub>5 6</sub> |
| 2                           | 1                           | <sup>5</sup> <sub>7 9</sub>   | <sup>5</sup> <sub>9</sub>   | <sup>3</sup> <sub>4 5 9</sub> | 6                               | <sup>4</sup> <sub>7 9</sub>   | <sup>5</sup> <sub>9</sub>         | 8                             |
| <sup>5</sup> <sub>7 9</sub> | 4                           | <sup>5 6</sup> <sub>7 9</sub> | <sup>1</sup> <sub>5 9</sub> | <sup>5</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>5 7 8 9</sub> | 3                             | <sup>1 2</sup> <sub>5 6 9</sub>   | <sup>1 2</sup> <sub>5 6</sub> |
| 3                           | 8                           | <sup>5 6</sup> <sub>7 9</sub> | 2                           | <sup>4 5</sup> <sub>9 7</sub> | <sup>1</sup> <sub>5 9</sub>     | <sup>1</sup> <sub>4 6 7</sub> | <sup>1</sup> <sub>5 6 4 5 6</sub> | <sup>1</sup> <sub>5 6</sub>   |
| <sup>5</sup> <sub>7 9</sub> | 3                           | <sup>2</sup> <sub>5 7 9</sub> | <sup>1</sup> <sub>5 9</sub> | 6                             | <sup>1 2</sup> <sub>5 9</sub>   | <sup>1 2</sup> <sub>4 8</sub> | <sup>1 2</sup> <sub>8</sub>       | <sup>1 2</sup>                |
| 1                           | <sup>5</sup> <sub>9</sub>   | <sup>2</sup> <sub>5 9</sub>   | 8                           | <sup>3</sup> <sub>5 9</sub>   | 4                               | <sup>2</sup> <sub>6</sub>     | 7                                 | <sup>2 3</sup> <sub>6</sub>   |
| 8                           | 6                           | 4                             | <sup>1</sup> <sub>3</sub>   | 7                             | <sup>1 2</sup>                  | 5                             | <sup>1 2 3</sup>                  | 9                             |

|                                 |                                   |                               |                               |                               |                                   |                               |                                     |                             |
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| <sup>2</sup> <sub>4 8 9</sub>   | <sup>2 3</sup> <sub>4 8 9</sub>   | <sup>2 3</sup> <sub>8</sub>   | <sup>4</sup> <sub>9</sub>     | 7                             | <sup>4 5</sup> <sub>8</sub>       | <sup>1 2</sup> <sub>5</sub>   | <sup>1</sup> <sub>5</sub>           | 6                           |
| <sup>1 2</sup> <sub>4 8</sub>   | <sup>1 2</sup> <sub>6 8</sub>     | <sup>1 2</sup> <sub>8 6</sub> | 3                             | <sup>1</sup> <sub>5 8</sub>   | <sup>1</sup> <sub>4 5 8</sub>     | 9                             | 7                                   | <sup>2</sup> <sub>5</sub>   |
| 1                               | 7                                 | 5                             | <sup>1</sup> <sub>9</sub>     | 6                             | 2                                 | 3                             | 8                                   | 4                           |
| 3                               | <sup>5</sup> <sub>9</sub>         | <sup>2</sup> <sub>6 8</sub>   | <sup>2</sup> <sub>4 6</sub>   | <sup>2</sup> <sub>8</sub>     | <sup>4</sup> <sub>8</sub>         | 7                             | <sup>5</sup> <sub>9</sub>           | 1                           |
| <sup>1 2</sup> <sub>6 8 9</sub> | <sup>1 2</sup> <sub>6 8 9</sub>   | 4                             | 5                             | <sup>1 2 3</sup> <sub>8</sub> | 7                                 | <sup>2</sup> <sub>6</sub>     | <sup>3</sup> <sub>6 9</sub>         | <sup>2</sup> <sub>8 9</sub> |
| <sup>1 2</sup> <sub>5 6</sub>   | <sup>1 2</sup> <sub>5 6 8</sub>   | 7                             | <sup>1 2</sup> <sub>6</sub>   | 9                             | <sup>1</sup> <sub>3 6 4 5 6</sub> | <sup>2</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>4 5 6</sub>       | <sup>2</sup> <sub>5 8</sub> |
| <sup>1 2</sup> <sub>4 5 6</sub> | <sup>1 2 3</sup> <sub>4 5 6</sub> | <sup>1 2 3</sup> <sub>6</sub> | <sup>1 2</sup> <sub>6 7</sub> | <sup>1 2 3</sup> <sub>5</sub> | <sup>1</sup> <sub>5 6</sub>       | 8                             | <sup>1</sup> <sub>4 5 6 9 7 9</sub> | <sup>5</sup> <sub>9</sub>   |
| 7                               | <sup>1</sup> <sub>4 5 6</sub>     | <sup>1</sup> <sub>6</sub>     | 8                             | <sup>1</sup> <sub>5</sub>     | 9                                 | <sup>1</sup> <sub>4 5 6</sub> | 2                                   | 3                           |
| <sup>1 2</sup> <sub>5 6 8</sub> | <sup>1 2 3</sup> <sub>5 6 8</sub> | 9                             | <sup>1 2</sup> <sub>6 7</sub> | 4                             | <sup>1</sup> <sub>3 5 6</sub>     | <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>5 6</sub>         | <sup>5</sup> <sub>7</sub>   |

|                               |                               |                               |                             |                                   |                               |                                   |                                 |                             |   |
|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------------|-------------------------------|-----------------------------------|---------------------------------|-----------------------------|---|
| <sup>1</sup> <sub>4 7</sub>   | <sup>4</sup> <sub>6</sub>     | <sup>4 5 6</sup> <sub>7</sub> | <sup>1</sup> <sub>5 3</sub> | <sup>1</sup> <sub>4 6</sub>       | <sup>1</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>4 5</sub>       | 8                               | 2                           | 9 |
| <sup>1</sup> <sub>4 6</sub>   | 2                             | 8                             | 7                           | <sup>1</sup> <sub>6</sub>         | 9                             | <sup>4 5 6</sup> <sub>4 5 3</sub> | <sup>4</sup> <sub>6</sub>       | <sup>3</sup> <sub>4 6</sub> |   |
| 9                             | <sup>4 5 6</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>6</sub> | <sup>2</sup> <sub>5 6</sub>       | 8                             | 7                                 | 1                               | <sup>4</sup> <sub>6</sub>   |   |
| 8                             | <sup>1</sup> <sub>9</sub>     | 4                             | <sup>1 2</sup> <sub>6</sub> | <sup>1 2</sup> <sub>5 6 7 9</sub> | <sup>1 2</sup> <sub>5</sub>   | <sup>1 2 3</sup> <sub>9</sub>     | <sup>3</sup> <sub>9 7</sub>     | <sup>3</sup> <sub>7</sub>   |   |
| <sup>2</sup> <sub>7</sub>     | <sup>1</sup> <sub>9</sub>     | 6                             | <sup>1 2</sup> <sub>8</sub> | <sup>1 2</sup> <sub>7</sub>       | <sup>1 2 3</sup> <sub>9</sub> | <sup>3</sup> <sub>8 9</sub>       | <sup>5</sup> <sub>7</sub>       |                             |   |
| 5                             | <sup>1</sup> <sub>9 7</sub>   | <sup>2</sup> <sub>8</sub>     | <sup>1 2</sup> <sub>8</sub> | <sup>1 2</sup> <sub>7 8 9</sub>   | 3                             | <sup>1 2</sup> <sub>4</sub>       | 6                               | <sup>4</sup> <sub>7 8</sub> |   |
| <sup>1 2</sup> <sub>4 6</sub> | 7                             | <sup>1 2</sup> <sub>9</sub>   | 5                           | <sup>1 2 3</sup> <sub>8</sub>     | <sup>1 2</sup> <sub>4</sub>   | <sup>3</sup> <sub>4 6 9</sub>     | <sup>3</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>8</sub>   |   |
| 3                             | <sup>4 5</sup> <sub>8</sub>   | <sup>1</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>8 7 8</sub>     | 6                             | <sup>4 5</sup> <sub>9 7 8 9</sub> | <sup>4 5</sup> <sub>7 8 9</sub> | 2                           |   |
| <sup>2</sup> <sub>4 6</sub>   | <sup>4 5 6</sup> <sub>8</sub> | <sup>2</sup> <sub>5</sub>     | 9                           | <sup>2 3</sup> <sub>7 8</sub>     | <sup>2</sup> <sub>4 7</sub>   | <sup>3</sup> <sub>4 5 6 7 8</sub> | <sup>3</sup> <sub>7 8</sub>     | 1                           |   |

|                                   |                                   |                                 |                               |                                 |                                 |                                   |                                 |                                 |                             |
|-----------------------------------|-----------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|-----------------------------|
| <sup>1</sup> <sub>4 7</sub>       | <sup>1</sup> <sub>6 4</sub>       | <sup>3</sup> <sub>9</sub>       | <sup>3</sup> <sub>4 6 9</sub> | <sup>1</sup> <sub>8 9</sub>     | <sup>4</sup> <sub>8</sub>       | <sup>3</sup> <sub>4 6 9</sub>     | 2                               | 5                               | 7                           |
| <sup>1</sup> <sub>4 5 6 9</sub>   | 7                                 | <sup>3</sup> <sub>4 5 6 9</sub> | <sup>1</sup> <sub>9</sub>     | <sup>3</sup> <sub>4 5 6</sub>   | 2                               | 8                                 | <sup>3</sup> <sub>4 6 4</sub>   | <sup>3</sup> <sub>4</sub>       |                             |
| <sup>4 5 6</sup> <sub>4 5 6</sub> | 2                                 | 8                               | <sup>5 6</sup> <sub>7</sub>   | <sup>3</sup> <sub>4 5 6 7</sub> | <sup>3</sup> <sub>4 5 6</sub>   | <sup>3</sup> <sub>4 6</sub>       | 1                               | 9                               |                             |
| <sup>4 5 6</sup> <sub>7</sub>     | <sup>4 5</sup> <sub>4 5</sub>     | 1                               | 2                             | <sup>3</sup> <sub>4 5 6 7</sub> | 8                               | 9                                 | <sup>4</sup> <sub>7</sub>       | <sup>3</sup> <sub>4 5</sub>     | <sup>3</sup> <sub>4 5</sub> |
| 3                                 | <sup>4 5</sup> <sub>8</sub>       | <sup>4 5 6</sup> <sub>7</sub>   | <sup>5 6</sup> <sub>7</sub>   | 9                               | <sup>4 5 6</sup> <sub>4 5</sub> | <sup>1</sup> <sub>4 5</sub>       | <sup>2</sup> <sub>4 7 8</sub>   | <sup>1 2</sup> <sub>4 5 8</sub> |                             |
| 2                                 | <sup>4 5</sup> <sub>8 9 7 9</sub> | <sup>4 5</sup> <sub>7 9</sub>   | <sup>5</sup> <sub>7</sub>     | 1                               | <sup>3</sup> <sub>4 5</sub>     | <sup>3</sup> <sub>4 5</sub>       | <sup>3</sup> <sub>4 7 8</sub>   | 6                               |                             |
| <sup>1</sup> <sub>5 8 9</sub>     | 6                                 | 2                               | 4                             | <sup>5</sup> <sub>8</sub>       | 7                               | <sup>1</sup> <sub>5 3</sub>       | <sup>3</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>5 8</sub>     |                             |
| <sup>1</sup> <sub>4 5 8 9</sub>   | <sup>1</sup> <sub>4 5 9</sub>     | <sup>4 5</sup> <sub>9</sub>     | 3                             | 2                               | <sup>5 6</sup> <sub>9</sub>     | 7                                 | <sup>4</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>4 5 8</sub>   |                             |
| <sup>4 5</sup> <sub>7 8 9</sub>   | <sup>4 5</sup> <sub>9 7</sub>     | <sup>3</sup> <sub>4 5 9</sub>   |                               | <sup>5 6</sup> <sub>8</sub>     | 1                               | <sup>4 5 6</sup> <sub>4 8 9</sub> | <sup>2</sup> <sub>6 4 5 8</sub> | <sup>2</sup> <sub>8</sub>       |                             |

|                                 |                           |                           |                               |                                 |                                 |                                 |                                 |                                   |
|---------------------------------|---------------------------|---------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------------|
| 8                               | 5                         | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>7</sub>     | <sup>2 3</sup> <sub>6 7</sub>   | <sup>1 2 3</sup> <sub>6 9</sub> | <sup>1 2</sup> <sub>6 9</sub>   | 4                               | <sup>1 2</sup> <sub>6</sub>       |
| <sup>1</sup> <sub>9</sub>       | 6                         | <sup>4</sup> <sub>7</sub> | 5                             | <sup>2</sup> <sub>4 7</sub>     | <sup>1 2</sup> <sub>4 9</sub>   | <sup>1 2</sup> <sub>8 9</sub>   | 3                               | <sup>1</sup> <sub>8 9</sub>       |
| <sup>1</sup> <sub>9</sub>       | 2                         | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>4 6 4</sub> | <sup>3</sup> <sub>6</sub>       | 8                               | 7                               | <sup>1</sup> <sub>5 9</sub>     | <sup>1</sup> <sub>5 6</sub>       |
| <sup>2</sup> <sub>5 6</sub>     | 1                         | 9                         | <sup>6</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5 6</sub>   | 4                               | <sup>3</sup> <sub>7 8</sub>     | <sup>2</sup> <sub>7 8</sub>       |
| <sup>2</sup> <sub>5</sub>       | <sup>3</sup> <sub>4</sub> | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>4 7 8</sub> | <sup>2 3</sup> <sub>4 5 7</sub> | <sup>1 2 3</sup> <sub>4 5</sub> | <sup>1 2</sup> <sub>8</sub>     | 6                               | 9                                 |
| 7                               | <sup>3</sup> <sub>4</sub> | <sup>6</sup> <sub>8</sub> | <sup>1</sup> <sub>4 8</sub>   | <sup>1</sup> <sub>4 6</sub>     | 9                               | <sup>1 2 3</sup> <sub>4 6</sub> | 5                               | <sup>1</sup> <sub>8</sub>         |
| 3                               | <sup>7 8</sup>            | 2                         | 9                             | <sup>4 5 6</sup> <sub>8</sub>   | <sup>4 5 6</sup>                | <sup>1</sup> <sub>8</sub>       | <sup>5</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>4 5 6 7 8</sub> |
| 4                               | <sup>8 9</sup>            | <sup>5 6</sup>            | 3                             | 1                               | 7                               | <sup>6</sup> <sub>8 9</sub>     | 2                               | <sup>5 6</sup> <sub>8</sub>       |
| <sup>5 6</sup> <sub>7 8 9</sub> | 1                         | 2                         | <sup>4 5 6</sup> <sub>8</sub> | <sup>4 5 6</sup>                | 3                               | <sup>5</sup> <sub>7 8 9</sub>   | <sup>4 5 6</sup> <sub>7 8</sub> |                                   |

|                                   |                                   |                               |                             |                                 |                             |                             |                                 |                               |
|-----------------------------------|-----------------------------------|-------------------------------|-----------------------------|---------------------------------|-----------------------------|-----------------------------|---------------------------------|-------------------------------|
| 9                                 | 6                                 | <sup>2 3</sup> <sub>4 7</sub> | <sup>2 3</sup> <sub>7</sub> | 8                               | <sup>3</sup> <sub>7</sub>   | <sup>1</sup> <sub>4 5</sub> | <sup>1</sup> <sub>4 5</sub>     | <sup>1</sup> <sub>4 7</sub>   |
| 1                                 | <sup>3</sup> <sub>4 7</sub>       | <sup>3</sup> <sub>4 7</sub>   | 9                           | <sup>3</sup> <sub>4 5 7</sub>   | <sup>3</sup> <sub>5 7</sub> | 2                           | <sup>6</sup> <sub>8</sub>       | <sup>6</sup> <sub>8</sub>     |
| 8                                 | 5                                 | <sup>2 3</sup> <sub>4 7</sub> | 6                           | <sup>2 3</sup> <sub>4</sub>     | 1                           | <sup>3</sup> <sub>4 9</sub> | <sup>3</sup> <sub>4 9 7 9</sub> |                               |
| <sup>4 5</sup> <sub>4</sub>       | <sup>8</sup> <sub>8</sub>         | 9                             | 1                           | 7                               | 2                           | 6                           | <sup>4 5</sup> <sub>8</sub>     | 3                             |
| <sup>2 3</sup> <sub>4 5 6</sub>   | 7                                 | <sup>1</sup> <sub>8</sub>     | 5                           | 6                               | 4                           | <sup>1</sup> <sub>9</sub>   | <sup>1 2</sup> <sub>8 9</sub>   | <sup>1 2</sup> <sub>8 9</sub> |
| <sup>2</sup> <sub>4 5 6</sub>     | <sup>1 2</sup> <sub>4</sub>       | <sup>1</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>8</sub>   | 9                               | <sup>3</sup> <sub>8</sub>   | <sup>1</sup> <sub>4 5</sub> | 7                               | <sup>1 2</sup> <sub>4</sub>   |
| <sup>2 3</sup> <sub>7</sub>       | <sup>1 2 3</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>6</sub>     | 4                           | <sup>2 3</sup> <sub>5 7 8</sub> | <sup>3</sup> <sub>9</sub>   | <sup>1</sup> <sub>3 9</sub> | <sup>1 2 3</sup> <sub>6 9</sub> | <sup>1 2</sup> <sub>6 9</sub> |
| <sup>2 3</sup> <sub>4</sub>       | <sup>1 2 3</sup> <sub>4 8 9</sub> | <sup>1</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>8</sub> | <sup>2 3</sup>                  | 6                           | 7                           | <sup>1 2 3</sup> <sub>4 9</sub> | 5                             |
| <sup>2 3</sup> <sub>4 5 6 7</sub> | <sup>2 3</sup> <sub>4 5 6</sub>   | <sup>3</sup> <sub>4 5 6</sub> | <sup>2 3</sup> <sub>7</sub> | 1                               | 9                           | 8                           | <sup>2 3</sup> <sub>4 6 4</sub> | <sup>2</sup> <sub>6</sub>     |

|                     |                   |                   |                     |                   |                     |                   |                       |                     |
|---------------------|-------------------|-------------------|---------------------|-------------------|---------------------|-------------------|-----------------------|---------------------|
| <sup>2</sup><br>4 8 | 5                 | <sup>1</sup><br>6 | <sup>4</sup><br>8 9 | <sup>2</sup><br>7 | <sup>4</sup><br>8 9 | <sup>1</sup><br>6 | <sup>4</sup><br>7 8 9 | 3                   |
| 7                   | <sup>1</sup><br>4 | 3                 | <sup>4</sup><br>5   | <sup>4</sup><br>5 | <sup>8</sup><br>9   | <sup>1</sup><br>8 | 2                     | <sup>1</sup><br>4   |
| <sup>2</sup><br>4   | <sup>4</sup><br>9 | <sup>2</sup><br>6 | 1                   | <sup>2</sup><br>7 | 3                   | <sup>5</sup><br>6 | <sup>4</sup><br>7 8 9 | <sup>4</sup><br>5 6 |
| 5                   | <sup>2</sup><br>6 | 4                 | <sup>3</sup><br>7   | 8                 | <sup>6</sup><br>7   | <sup>2</sup><br>3 | 1                     | <sup>2</sup><br>7   |
| 1                   | 3                 | 7                 | <sup>4</sup><br>5   | <sup>4</sup><br>5 | 2                   | <sup>5</sup><br>8 | 6                     | <sup>4</sup><br>5   |
| 9                   | <sup>2</sup><br>6 | 8                 | <sup>4</sup><br>5   | <sup>1</sup><br>6 | <sup>3</sup><br>4   | <sup>2</sup><br>5 | <sup>3</sup><br>4     | <sup>5</sup><br>6   |
| <sup>2</sup><br>3   | 8                 | <sup>1</sup><br>2 | <sup>2</sup><br>3   | <sup>1</sup><br>3 | <sup>1</sup><br>4   | <sup>1</sup><br>2 | 3                     | 9                   |
| <sup>2</sup><br>3   | <sup>1</sup><br>7 | <sup>1</sup><br>2 | <sup>2</sup><br>3   | <sup>1</sup><br>3 | <sup>1</sup><br>6   | <sup>4</sup><br>5 | 6                     | <sup>1</sup><br>2   |
| 6                   | <sup>1</sup><br>4 | <sup>1</sup><br>2 | <sup>2</sup><br>3   | 9                 | <sup>1</sup><br>4   | <sup>1</sup><br>2 | 3                     | <sup>1</sup><br>2   |

|                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 8                 | 5                 | <sup>4</sup><br>7 | <sup>2</sup><br>6 | <sup>4</sup><br>6 | 3                 | <sup>4</sup><br>6 | <sup>1</sup><br>2 | <sup>2</sup><br>4 | <sup>1</sup><br>2 |
| <sup>2</sup><br>4 | 3                 | <sup>2</sup><br>4 | <sup>2</sup><br>7 | <sup>1</sup><br>8 | <sup>1</sup><br>4 | <sup>1</sup><br>9 | 5                 | <sup>2</sup><br>4 | 6                 |
| 1                 | <sup>4</sup><br>7 | <sup>6</sup><br>9 | <sup>4</sup><br>7 | 2                 | <sup>5</sup><br>6 | <sup>4</sup><br>5 | <sup>6</sup><br>9 | <sup>4</sup><br>8 | <sup>3</sup><br>9 |
| <sup>2</sup><br>3 | <sup>4</sup><br>7 | 6                 | 9                 | 1                 | <sup>5</sup><br>6 | <sup>2</sup><br>3 | <sup>2</sup><br>3 | <sup>2</sup><br>3 | 8                 |
| 5                 | <sup>1</sup><br>4 | <sup>1</sup><br>2 | <sup>3</sup><br>6 | 7                 | <sup>6</sup><br>9 | 8                 | <sup>1</sup><br>2 | <sup>2</sup><br>3 | <sup>1</sup><br>2 |
| <sup>2</sup><br>3 | <sup>1</sup><br>7 | <sup>6</sup><br>8 | <sup>1</sup><br>2 | <sup>3</sup><br>6 | <sup>3</sup><br>6 | 4                 | <sup>1</sup><br>2 | <sup>2</sup><br>3 | <sup>2</sup><br>3 |
| 6                 | <sup>1</sup><br>4 | <sup>1</sup><br>8 | <sup>3</sup><br>8 | 9                 | <sup>1</sup><br>8 | 7                 | <sup>2</sup><br>3 | 5                 | <sup>2</sup><br>3 |
| <sup>3</sup><br>4 | 2                 | <sup>4</sup><br>5 | <sup>3</sup><br>6 | <sup>4</sup><br>5 | <sup>6</sup><br>8 | <sup>4</sup><br>6 | <sup>3</sup><br>4 | <sup>1</sup><br>4 | <sup>3</sup><br>9 |
| <sup>3</sup><br>4 | <sup>1</sup><br>9 | <sup>1</sup><br>8 | <sup>1</sup><br>8 | <sup>3</sup><br>8 | <sup>2</sup><br>4 | <sup>3</sup><br>6 | <sup>3</sup><br>4 | <sup>7</sup><br>8 | <sup>3</sup><br>9 |

|                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 4                 | <sup>7</sup><br>6 | 2                 | <sup>1</sup><br>8 | <sup>3</sup><br>8 | <sup>3</sup><br>6 | <sup>3</sup><br>7 | 5                 | <sup>7</sup><br>9 |
| 9                 | 8                 | <sup>3</sup><br>6 | 7                 | <sup>4</sup><br>5 | <sup>2</sup><br>3 | 1                 | <sup>2</sup><br>3 | <sup>2</sup><br>3 |
| 1                 | 5                 | <sup>3</sup><br>6 | 9                 | <sup>4</sup><br>6 | <sup>2</sup><br>3 | <sup>3</sup><br>4 | 8                 | <sup>2</sup><br>3 |
| 2                 | 9                 | <sup>1</sup><br>4 | 6                 | <sup>4</sup><br>5 | <sup>4</sup><br>5 | <sup>3</sup><br>4 | <sup>1</sup><br>3 | 8                 |
| <sup>3</sup><br>7 | <sup>4</sup><br>6 | 5                 | <sup>4</sup><br>8 | <sup>3</sup><br>7 | 1                 | 2                 | <sup>3</sup><br>6 | <sup>3</sup><br>9 |
| <sup>3</sup><br>8 | <sup>1</sup><br>6 | <sup>1</sup><br>4 | <sup>4</sup><br>5 | <sup>3</sup><br>8 | <sup>2</sup><br>4 | <sup>3</sup><br>5 | 7                 | <sup>1</sup><br>4 |
| <sup>5</sup><br>7 | <sup>1</sup><br>2 | 6                 | 9                 | <sup>1</sup><br>5 | 3                 | <sup>5</sup><br>7 | 4                 | <sup>1</sup><br>2 |
| <sup>5</sup><br>7 | 3                 | <sup>1</sup><br>4 | <sup>1</sup><br>2 | <sup>4</sup><br>5 | <sup>4</sup><br>5 | <sup>4</sup><br>5 | <sup>1</sup><br>2 | 6                 |
| <sup>5</sup><br>7 | <sup>1</sup><br>2 | <sup>1</sup><br>4 | <sup>1</sup><br>2 | <sup>4</sup><br>5 | <sup>4</sup><br>5 | <sup>4</sup><br>5 | <sup>1</sup><br>2 | <sup>1</sup><br>2 |

|                              |                              |                        |                              |                        |                              |                        |                        |                            |
|------------------------------|------------------------------|------------------------|------------------------------|------------------------|------------------------------|------------------------|------------------------|----------------------------|
| 4                            | <div>1 2<br/>7 6</div>       | <div>1 2<br/>7</div>   | <div>2 3<br/>7 8</div>       | 5                      | <div>2 3<br/>7 8<br/>6</div> | <div>1 3<br/>6</div>   | <div>1 2 3<br/>6</div> | 9                          |
| <div>2<br/>7 6<br/>9</div>   | <div>1 2<br/>7 6<br/>9</div> | 3                      | 4                            | <div>2<br/>7 6</div>   | <div>2<br/>7 6</div>         | 8                      | <div>1 2<br/>5 6</div> | <div>1 2<br/>7 5 6</div>   |
| <div>2<br/>7 6</div>         | 8                            | 5                      | 1                            | <div>2 3<br/>7 6</div> | 9                            | <div>3<br/>4 6</div>   | <div>2 3<br/>6 4</div> | <div>2<br/>7 6</div>       |
| <div>2 3<br/>7 6<br/>9</div> | <div>2 3<br/>7 6<br/>9</div> | <div>2<br/>7 8</div>   | <div>2 3<br/>7 5</div>       | <div>1 2 3<br/>7</div> | 4                            | <div>1 3<br/>5 6</div> | <div>1 3<br/>5 6</div> | <div>1<br/>5 6<br/>8</div> |
| <div>3<br/>7 6</div>         | <div>3<br/>4 6<br/>7</div>   | <div>3<br/>4 7</div>   | <div>3<br/>7 5</div>         | 8                      | <div>1 3<br/>7 5</div>       | 2                      | 9                      | <div>1<br/>4 5 6</div>     |
| 1                            | 5                            | <div>2<br/>4 8</div>   | 6                            | 9                      | <div>2 3</div>               | <div>3<br/>4</div>     | 7                      | <div>4<br/>8</div>         |
| 8                            | <div>1 2 3<br/>7</div>       | 6                      | <div>2 3<br/>7 5<br/>9</div> | <div>1 2 3<br/>7</div> | <div>1 2 3<br/>7 5</div>     | <div>1<br/>5 9</div>   | 4                      | <div>1 2<br/>5</div>       |
| 5                            | <div>1 2<br/>4 7</div>       | <div>1 2<br/>4 7</div> | <div>2<br/>7 8 9</div>       | <div>1 2<br/>7 6</div> | <div>1 2<br/>7 8 6</div>     | <div>1<br/>6 9</div>   | <div>1 2<br/>6</div>   | 3                          |
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|                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
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|                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| <sup>1</sup><br>7 | 5                 | <sup>1</sup><br>2 | <sup>4</sup><br>7 | <sup>6</sup><br>7 | <sup>3</sup><br>6 | <sup>1</sup><br>2 | <sup>6</sup><br>9 | 8                 |
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|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3 | 1 | 3 | 1 | 2 | 3 | 2 | 6 | 9 | 1 | 5 | 3 | 1 | 3 |
| 7 | 8 | 7 | 7 | 5 | 8 | 4 | 8 |   | 6 | 7 | 8 | 7 | 5 |   |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 5 | 6 | 1 | 5 | 6 | 7 | 1 | 6 | 1 | 6 | 5 | 6 | 2 | 4 | 5 | 6 |
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| 1 | 2 | 2 | 5 | 6 | 8 | 1 | 3 | 4 | 1 | 2 | 6 | 7 | 5 | 6 | 5 | 9 |   |
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| 1 | 6 | 3 | 2 | 4 | 1 | 6 | 5 | 6 | 1 | 6 | 5 | 5 | 6 | 7 | 8 | 9 | 8 |
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|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6 | 1 | 2 | 2 | 2 | 8 | 3 | 2 |   |   |   |   |   |   |   |   |   |
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|               |               |               |                   |            |              |                 |                   |                   |
|---------------|---------------|---------------|-------------------|------------|--------------|-----------------|-------------------|-------------------|
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|               |               |                 |            |              |          |          |            |              |
|---------------|---------------|-----------------|------------|--------------|----------|----------|------------|--------------|
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| 3<br>8 6      | 2 3<br>8 9    | 2<br>6 8 9      | 1<br>4     | 3<br>8 9     | 1<br>4   | 5        | 7          | 3<br>9       |
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| 4 5<br>8      | 6             | 1<br>9          | 2          | 5<br>7       | 4<br>8 9 | 3        | 1<br>4 8   | 1<br>4 7 8   |
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|            |            |            |            |          |            |          |                |              |
|------------|------------|------------|------------|----------|------------|----------|----------------|--------------|
| 1<br>9     | 1 2<br>4 5 | 2<br>5 9   | 3          | 2<br>7 9 | 1 2<br>4 7 | 2<br>5 9 | 8              | 6            |
| 8 9        | 2<br>4 5 8 | 7          | 6          | 2<br>8 9 | 2<br>4 8   | 1<br>5 9 | 2 3<br>5 9     | 3            |
| 1<br>6 8 9 | 3<br>1 2 6 | 2 3<br>8 9 | 1 2<br>8 9 | 5        | 1 2<br>8   | 2<br>9   | 7              | 4            |
| 3<br>7 8   | 2<br>7 8   | 6          | 2<br>7 8 9 | 1        | 2 3<br>7 8 | 5<br>8 9 | 4              | 5<br>8 9     |
| 5          | 1<br>7 8   | 4          | 7 8 9      | 7 8 9    | 7 8        | 3        | 1<br>6 9       | 2            |
| 1<br>8     | 3<br>9     | 2 3<br>8   | 2<br>5 8   | 4        | 2 3<br>8 6 | 7        | 1<br>5 6       | 1<br>5 8     |
| 2          | 5<br>7 8   | 5<br>8 9   | 4          | 3        | 1<br>7 8   | 6        | 1<br>5 9       | 1<br>5 7 8 9 |
| 7<br>8 9   | 6<br>7 8   | 1          | 2<br>7 8   | 2<br>7 8 | 5          | 4        | 2 3<br>9 7 8 9 | 3            |
| 4          | 3          | 5<br>8     | 1 2<br>7 8 | 6        | 9          | 2<br>5 8 | 1 2<br>5 7 8   | 1<br>5 7 8   |

|          |               |               |               |               |            |            |              |              |            |
|----------|---------------|---------------|---------------|---------------|------------|------------|--------------|--------------|------------|
| 1<br>7   | 5<br>4 5<br>7 | 3<br>4 5<br>7 | 1<br>4 5<br>7 | 3<br>4 5<br>7 | 2          | 1<br>4 7 9 | 6            | 8            | 1<br>4 5 9 |
| 9        | 6             | 1<br>4 5 8    | 3             | 4 5<br>8      | 6          | 1<br>4 7 9 | 7            | 1<br>4 5 9   | 2          |
| 1<br>7 8 | 5<br>2        | 1<br>4 5 7 8  | 4 5<br>7 8    | 6             | 1<br>4 7 9 | 3          | 1<br>4 5 9   | 1<br>4 5 9   |            |
| 2<br>5 8 | 9             | 4 5<br>8      | 1 2<br>4 5    | 3<br>4 5      | 6          | 1<br>4 5   | 1<br>4 5 3   | 7            |            |
| 2<br>7   | 1             | 4 5<br>7      | 2<br>4 5 7    | 3<br>4 5 9    | 2 3<br>4 7 | 8          | 3<br>4 5 6 9 | 3<br>4 5 6 9 |            |
| 3        | 4 5<br>7      | 6             | 1<br>4 5 7    | 4 5<br>7 9    | 8          | 1<br>4 5   | 2            | 1<br>4 5 9   |            |
| 1<br>7   | 6<br>7        | 3<br>9        | 2<br>4 6 7 8  | 3<br>4 7 8    | 5          | 1 2<br>4   | 1<br>4 6 8   | 1<br>3 4 6   |            |
| 4        | 5<br>7        | 3<br>2        | 6<br>7 8      | 1<br>7        | 3<br>9     | 5<br>6 8   | 3<br>5 6 8   | 3<br>5 6 8   |            |
| 1<br>5 6 | 8             | 1<br>5 3      | 9             | 4<br>3 4      | 2 3<br>4   | 1 2<br>4 5 | 7            | 1<br>4 5 6 3 |            |

|            |            |          |            |            |          |              |                |            |
|------------|------------|----------|------------|------------|----------|--------------|----------------|------------|
| 7<br>6 9   | 2 3<br>9   | 6<br>7 9 | 5          | 4<br>9     | 1        | 2<br>4       | 2<br>4 7       | 8          |
| 1<br>8 9   | 2<br>8 9   | 4        | 3          | 2<br>8 9   | 7        | 6            | 5              | 1 2        |
| 1<br>7 8   | 5          | 1<br>7 8 | 4          | 2<br>4 8   | 6        | 3            | 9              | 1 2<br>4 7 |
| 2<br>5 8 9 | 1          | 3        | 4<br>6 4 8 | 2<br>4 8 9 | 7        | 4<br>6 4 5 6 | 2<br>4 5 6     |            |
| 2<br>5 9   | 7          | 5<br>9   | 1 2<br>4 6 | 3          | 2<br>4 9 | 1 2<br>4 5 9 | 8              | 2<br>4 5 6 |
| 4          | 6          | 8 9      | 7          | 1 2<br>8   | 5        | 1 2<br>9     | 1 2 3<br>2 3   |            |
| 1<br>7 8   | 3<br>4 8   | 3<br>7 8 | 1<br>4     | 2<br>4 7   | 6        | 1 2<br>4 5 8 | 1 2 3<br>4 7   | 9          |
| 1<br>7 8   | 3<br>5 6 4 | 3<br>8   | 2          | 9          | 1<br>4 7 | 4            | 1<br>4 5 6 7   | 3<br>4 5 6 |
| 1<br>7 9   | 3<br>6 4   | 3<br>9 7 | 1<br>6     | 8          | 5        | 2 3<br>4     | 1 2<br>4 6 4 6 | 2 3<br>7   |

|          |          |            |            |              |            |            |            |            |
|----------|----------|------------|------------|--------------|------------|------------|------------|------------|
| 3        | 7 9      | 2          | 1<br>7 5   | 8            | 1<br>4 5 7 | 1<br>4 5 9 | 1<br>4 5   | 6          |
| 4        | 6        | 1          | 2          | 9            | 5          | 7          | 5          | 8          |
| 8 9      | 5        | 7 8 9      | 1<br>8 9   | 3<br>6 7     | 1<br>3 4 7 | 3<br>1 4 9 | 2          | 1<br>3 4   |
| 7        | 8        | 5          | 3<br>1 5 6 | 4            | 1<br>5 3   | 2          | 1<br>5 6   | 9          |
| 2<br>6 9 | 2 3<br>9 | 4          | 7 8 9      | 1<br>5 6     | 3<br>7 8 9 | 1<br>5 6 8 | 1<br>5 6 8 | 1<br>3 5 7 |
| 6<br>9   | 1        | 5<br>9     | 3<br>7 8 9 | 5 6          | 2          | 4 5 6<br>8 | 4 5 6<br>8 | 3<br>4 5 7 |
| 1        | 2 3<br>9 | 3<br>6 8 9 | 5<br>8 9   | 7            | 5<br>8 9   | 4 5 6<br>8 | 4 5 6<br>8 | 2<br>4 5   |
| 2<br>8 9 | 4        | 8 9        | 1<br>8 9   | 1 2<br>5 8 9 | 6          | 3          | 7          | 1 2<br>5   |
| 5        | 2 3<br>7 | 3<br>7 8   | 4          | 1 2 3<br>8   | 1<br>3 8   | 1<br>6 8   | 9          | 1 2        |

|                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1                           | 3                           | <sup>2</sup> <sub>7</sub> 5 | <sup>4</sup> <sub>7</sub> 5 | <sup>5</sup> <sub>7</sub>   | <sup>4</sup> <sub>7</sub> 8 | 6                           | <sup>2</sup> <sub>8</sub>   | 9                           |
|                             |                             | <sup>6</sup> <sub>7</sub> 8 | <sup>6</sup> <sub>7</sub> 8 | 2                           | <sup>1</sup> <sub>9</sub> 3 | 5                           | 4                           | <sup>1</sup> <sub>8</sub> 3 |
| <sup>2</sup> <sub>5</sub>   | 4                           | <sup>2</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>5</sup> <sub>9</sub>   | <sup>1</sup> <sub>5</sub> 6 | <sup>2</sup> <sub>8</sub> 3 | 7                           | <sup>1</sup> <sub>2</sub> 3 |
| <sup>5</sup> <sub>8</sub>   | 1                           | 4                           | <sup>5</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>7</sub> 9 |                             | <sup>3</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>8</sub> 6 |
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| 7                           | <sup>5</sup> <sub>8</sub>   | 9                           | <sup>5</sup> <sub>9</sub>   | 4                           | 6                           | 1                           | <sup>2</sup> <sub>5</sub> 3 | <sup>2</sup> <sub>5</sub> 3 |
| <sup>2</sup> <sub>5</sub> 8 | <sup>5</sup> <sub>7</sub> 8 | 1                           | <sup>4</sup> <sub>7</sub> 9 | 3                           | <sup>4</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>8</sub> 9 | <sup>2</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>7</sub> 8 |
| <sup>2</sup> <sub>3</sub>   |                             | <sup>6</sup> <sub>7</sub> 8 | <sup>2</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>7</sub> 9 | 1                           | 5                           | <sup>4</sup> <sub>8</sub> 9 | <sup>2</sup> <sub>3</sub> 6 |
| 4                           | 9                           | <sup>2</sup> <sub>5</sub> 6 | 8                           | <sup>2</sup> <sub>7</sub>   | <sup>2</sup> <sub>7</sub>   |                             | 1                           | <sup>2</sup> <sub>5</sub> 6 |

|                             |                           |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1                           | <sup>2</sup> <sub>8</sub> | <sup>2</sup> <sub>5</sub> 3 | 6                           | 4                           | <sup>3</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>4</sub>   | <sup>3</sup> <sub>8</sub> 9 | <sup>3</sup> <sub>5</sub> 8 |
| <sup>2</sup> <sub>5</sub> 8 | 7                         | <sup>2</sup> <sub>5</sub> 8 |                             | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>9</sub> 3 | <sup>4</sup> <sub>6</sub> 4 | <sup>3</sup> <sub>8</sub> 9 | <sup>3</sup> <sub>5</sub> 6 |
| 9                           | 6                         | 4                           | <sup>5</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>8</sub>   | <sup>2</sup> <sub>7</sub> 3 | <sup>3</sup> <sub>2</sub>   | <sup>3</sup> <sub>8</sub> 9 | 1                           |
| <sup>2</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> 3 | <sup>4</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>8</sub>   | <sup>3</sup> <sub>7</sub> 9 | <sup>1</sup> <sub>8</sub>   | 7                           | 9                           |
|                             | 3                         | 1                           |                             | 7                           | 2                           | <sup>1</sup> <sub>8</sub> 6 | 5                           | 4                           |
| <sup>6</sup> <sub>8</sub>   | 3                         | <sup>1</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>9</sub>   | 5                           | 8                           | <sup>1</sup> <sub>2</sub> 6 | <sup>2</sup> <sub>6</sub>   |                             |
| <sup>2</sup> <sub>3</sub>   | 5                         | <sup>1</sup> <sub>2</sub> 3 | <sup>3</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 6 | 9                           | <sup>1</sup> <sub>2</sub> 3 | <sup>2</sup> <sub>3</sub> 6 |
| <sup>2</sup> <sub>3</sub>   | 9                         | <sup>1</sup> <sub>2</sub> 3 | <sup>4</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>2</sub> 3 | <sup>2</sup> <sub>3</sub> 6 |                             |
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|                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1                           | <sup>5</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>5</sub> 6 | <sup>4</sup> <sub>8</sub>   | <sup>2</sup> <sub>5</sub> 8 | <sup>2</sup> <sub>8</sub> 6 | <sup>2</sup> <sub>5</sub> 6 | 9                           | <sup>4</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>4</sub> 5 |
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| <sup>2</sup> <sub>3</sub>   | 1                           | <sup>4</sup> <sub>8</sub>   | <sup>2</sup> <sub>4</sub> 8 | 5                           | <sup>4</sup> <sub>8</sub> 9 | 7                           | <sup>4</sup> <sub>9</sub>   | 6                           |                             |
| <sup>4</sup> <sub>8</sub> 6 | <sup>2</sup> <sub>8</sub>   | <sup>6</sup> <sub>8</sub>   | 7                           | <sup>1</sup> <sub>4</sub> 8 | <sup>1</sup> <sub>6</sub> 4 | <sup>2</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 5 | 3                           |                             |
| 5                           | 9                           | <sup>3</sup> <sub>6</sub>   | <sup>1</sup> <sub>4</sub>   | 7                           | <sup>3</sup> <sub>6</sub>   | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>4</sub>   | 8                           |                             |
| <sup>2</sup> <sub>3</sub>   | <sup>2</sup> <sub>5</sub> 8 | 1                           | <sup>4</sup> <sub>8</sub> 9 | <sup>2</sup> <sub>8</sub>   | <sup>4</sup> <sub>7</sub> 8 | <sup>5</sup> <sub>8</sub>   | 6                           | <sup>2</sup> <sub>7</sub> 9 |                             |
| <sup>2</sup> <sub>3</sub>   | <sup>6</sup> <sub>8</sub> 9 | 4                           | <sup>3</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>2</sub> 5 |                             |
| 7                           | <sup>2</sup> <sub>5</sub> 8 | <sup>5</sup> <sub>8</sub>   | 6                           | <sup>1</sup> <sub>8</sub>   | 9                           | 3                           | <sup>1</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>4</sub> 5 |                             |

|                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1                           | 2                           | <sup>3</sup> <sub>7</sub> 8 | 4                           | <sup>7</sup> <sub>8</sub>   | 6                           | <sup>5</sup> <sub>9</sub> 7 | <sup>3</sup> <sub>5</sub> 8 | <sup>3</sup> <sub>8</sub> 9 |
| <sup>3</sup> <sub>7</sub> 8 | 4                           | <sup>3</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>2</sub> 3 | 5                           | 9                           | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub>   |                             |
| <sup>7</sup> <sub>8</sub> 9 | 6                           | 5                           | <sup>3</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub>   | <sup>1</sup> <sub>2</sub>   | <sup>9</sup> <sub>7</sub> 8 | 4                           |
| 2                           | <sup>5</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>8</sub> 9 | 6                           | 3                           | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>5</sub> 9 | 4                           | 7                           |
| <sup>3</sup> <sub>5</sub> 8 | 7                           | <sup>1</sup> <sub>8</sub>   | 9                           | 4                           | <sup>1</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>2</sub> 3 | <sup>3</sup> <sub>5</sub>   | 6                           |
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| <sup>4</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>8</sub>   | <sup>4</sup> <sub>6</sub>   | <sup>1</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>6</sub> 8 | 3                           | 7                           | <sup>2</sup> <sub>8</sub> 9 |
| <sup>3</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>8</sub> 9 | 2                           | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>6</sub> 8 | 7                           | 4                           | <sup>3</sup> <sub>8</sub> 9 | 5                           |
| <sup>5</sup> <sub>7</sub> 8 | <sup>5</sup> <sub>8</sub> 9 | <sup>3</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>5</sub> 8 | <sup>2</sup> <sub>8</sub> 9 | 4                           | 6                           | 1                           | <sup>3</sup> <sub>8</sub> 9 |

|                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>5</sup> <sub>9</sub>   | 6                           | 4                           | <sup>5</sup> <sub>8</sub>   | 2                           | <sup>3</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>5</sub> 9 | <sup>5</sup> <sub>7</sub> 8 |
| <sup>2</sup> <sub>5</sub> 9 | <sup>3</sup> <sub>7</sub>   | <sup>3</sup> <sub>7</sub>   | <sup>5</sup> <sub>8</sub> 9 | <sup>4</sup> <sub>5</sub> 8 | 1                           | <sup>4</sup> <sub>8</sub> 9 | <sup>2</sup> <sub>4</sub> 5 | <sup>2</sup> <sub>4</sub> 6 |
| 8                           | <sup>1</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>5</sub> 9 | 7                           | <sup>4</sup> <sub>5</sub> 9 | <sup>4</sup> <sub>6</sub>   | <sup>2</sup> <sub>4</sub> 6 | 3                           | <sup>4</sup> <sub>5</sub> 6 |
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| <sup>4</sup> <sub>5</sub> 6 | <sup>3</sup> <sub>5</sub>   | 8                           | 9                           | 7                           | 2                           | <sup>3</sup> <sub>4</sub> 6 | <sup>4</sup> <sub>5</sub> 6 | 1                           |
| 7                           | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 | <sup>6</sup> <sub>8</sub>   | <sup>6</sup> <sub>4</sub> 8 | 5                           | 9                           | <sup>2</sup> <sub>4</sub> 6 | <sup>2</sup> <sub>3</sub> 6 |
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| 3                           | <sup>2</sup> <sub>4</sub> 5 | <sup>2</sup> <sub>5</sub> 6 | <sup>2</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>2</sub> 6 | <sup>1</sup> <sub>2</sub> 6 | 9                           |
| 1                           | <sup>4</sup> <sub>5</sub> 9 | <sup>2</sup> <sub>5</sub> 9 | <sup>2</sup> <sub>5</sub>   | 6                           | <sup>3</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>3</sub>   | 8                           | <sup>2</sup> <sub>3</sub>   |

|                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 | 8                           | <sup>1</sup> <sub>2</sub> 4 | 5                           | <sup>1</sup> <sub>4</sub> 9 | <sup>1</sup> <sub>4</sub> 7 | 6                           | <sup>1</sup> <sub>4</sub> 7 |
| <sup>1</sup> <sub>2</sub> 4 | <sup>1</sup> <sub>2</sub> 6 | <sup>1</sup> <sub>6</sub> 9 | 7                           | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>4</sub>   | 5                           | 8                           |
| <sup>1</sup> <sub>2</sub> 4 | <sup>1</sup> <sub>2</sub> 6 | <sup>1</sup> <sub>6</sub> 9 | 5                           | 7                           | <sup>1</sup> <sub>4</sub> 8 | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub>   |
| <sup>1</sup> <sub>3</sub> 9 | <sup>1</sup> <sub>3</sub> 6 | <sup>1</sup> <sub>3</sub> 9 | <sup>1</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>6</sub> 8 | 2                           | <sup>1</sup> <sub>4</sub>   |
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| <sup>5</sup> <sub>7</sub>   | <sup>1</sup> <sub>8</sub> 9 | 2                           | 3                           | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 6 | <sup>5</sup> <sub>9</sub>   | <sup>4</sup> <sub>5</sub> 6 |
| 6                           | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>3</sub>   | 5                           | 9                           | <sup>1</sup> <sub>4</sub> 8 | <sup>1</sup> <sub>4</sub> 8 | 7                           | 2                           |
| <sup>5</sup> <sub>7</sub>   | <sup>1</sup> <sub>8</sub> 9 | 4                           | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>7</sub> 8 | <sup>2</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>6</sub> 8 | <sup>3</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>5</sub> 6 |

|               |               |                 |               |               |               |             |             |               |        |          |
|---------------|---------------|-----------------|---------------|---------------|---------------|-------------|-------------|---------------|--------|----------|
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|            |               |            |                 |             |               |                 |                      |               |               |             |
|------------|---------------|------------|-----------------|-------------|---------------|-----------------|----------------------|---------------|---------------|-------------|
| 9          | 4<br>6        | 3<br>4 6   | 3<br>4 5<br>7   | 1           | 8             | 2               | 4 5<br>6<br>7        | 3<br>4<br>7   | 3             |             |
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|          |             |                 |               |               |   |               |               |                 |  |  |
|----------|-------------|-----------------|---------------|---------------|---|---------------|---------------|-----------------|--|--|
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|            |               |              |          |               |               |            |             |                      |   |  |
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| 2 3<br>6      | 2 3<br>6      | 9          | 2 3<br>4 6    | 8               | 2 3<br>4 5 | 7             | 1 2 3<br>4 5 6  | 5 6             |   |  |
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| 1             | 2 3<br>8 9    | 2 3<br>4 7 | 3<br>4<br>8 9 | 4 5<br>7        | 6          | 4 5<br>9 7    | 2<br>4 5        | 2<br>5          |   |  |
| 4<br>7        | 3<br>9        | 3<br>4 7   | 1<br>4<br>9   | 3<br>4 5<br>7 9 | 2          | 8             | 1<br>4 5 6<br>7 | 5 6             |   |  |
| 2 3<br>6<br>9 | 2 3<br>6<br>9 | 8          | 1 2<br>6<br>9 | 1<br>6<br>7     | 2<br>7 9   | 1<br>5 6<br>7 | 5 6             | 4               |   |  |
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|                   |                 |                   |          |                   |                   |            |
|-------------------|-----------------|-------------------|----------|-------------------|-------------------|------------|
| 4 5 6<br>7 9      | 4 5 6<br>7 9    | 3<br>4 5 6<br>7 9 | 8        | 6 5<br>7 9        | 1 4<br>3 6<br>7 9 | 2          |
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| 1 4<br>7          | 4 7 8           | 2                 | 5 4      | 6                 | 3 1<br>7 8 8      | 9          |
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|            |                   |            |              |              |              |                 |              |       |
|------------|-------------------|------------|--------------|--------------|--------------|-----------------|--------------|-------|
| 1 7        | 5 7               | 1 2<br>4 7 | 9 7          | 1 2<br>4 7   | 8 7          | 6 7             | 1 2<br>4 7   | 3 7   |
| 8 6        | 8 6               | 4          | 1 2 3<br>7   | 1 2 5<br>7   | 3 5<br>7     | 1 2 5<br>7      | 1 2 5<br>7 9 | 2 7 9 |
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| 4 5<br>8 9 | 4 8               | 5 8        | 7            | 4 5<br>9     | 2            | 3               | 6            | 1     |
| 2          | 1 3<br>4 6<br>7 8 | 1 3<br>7 8 | 5            | 4 7<br>8     | 4 6<br>7     | 9               | 1 4<br>7 8   | 4 7 8 |
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|              |              |                     |            |                     |              |                |              |
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| 5 7<br>8 9   | 3 5<br>7 8 9 | 2 5<br>7 8 9        | 1 9<br>7   | 2 6<br>9            | 1 3<br>6 7 8 | 4              | 1 5 6<br>7 8 |
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| 3 6<br>7 9     | 2 3<br>6   | 4            | 2 5 6<br>7 9     | 8            | 2 5 6<br>9   | 1 5<br>9 7 9 | 3 7 9 |
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| 1 4 5<br>7 9   | 1 4<br>7   | 1 5<br>7 9   | 3 4 5<br>7 9     | 1 4 5<br>8 9 | 5 8 9        | 6 2          | 2     |
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|            |                |            |                   |              |              |            |              |
|------------|----------------|------------|-------------------|--------------|--------------|------------|--------------|
| 1 2<br>4 7 | 2 6<br>7 8 9   | 5          | 2 3<br>6 4<br>9 7 | 3 4<br>6     | 1 2 3<br>8 9 | 1 2 3<br>8 | 1 3<br>6 8 9 |
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| 6          | 4              | 1          | 2 5<br>8 9        | 5 7 9        | 2 5<br>7 8   | 3 5<br>7 8 | 3 7 8 9      |
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|               |                     |                   |          |              |            |                     |                |        |
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|          |          |          |        |          |            |        |          |          |          |            |
|----------|----------|----------|--------|----------|------------|--------|----------|----------|----------|------------|
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|-------|-------|-------|-----|---------|---------|-----------|-------|---------|
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| 3     | 2 5 6 | 2 6   | 4   | 5       | 8       | 9         | 1 2   | 1 2 6   |
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|          |            |            |            |            |            |          |            |          |
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| 9        | 3<br>8     | 6          | 1<br>7 8   | 3<br>7 8   | 1<br>4 5   | 3<br>8   | 2          | 4 5      |
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|--------|--------------|----------|-------------------|-----------------|-----------------|-----------------|-----------------|----------|---------------|
| 4      | 1<br>7       | 5        | 2<br>7 8          | 2 3<br>8        | 2 3<br>7        | 1 2<br>8        | 1<br>8          | 3<br>8   | 9             |
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|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 1 |   | 9 | 1 | 8 | 1 | 2 | 2 | 3 |
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| 8 |   | 8 |   | 7 | 9 | 8 | 9 |   |
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| 4 | 8 |   |   | 1 | 3 | 4 | 8 |   |
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|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 |   | 5 | 2 | 3 | 1 | 1 | 4 |   | 6 | 3 | 3 |
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| 6 | 9 | 5 | 8 | 1 | 2 | 4 | 5 | 5 | 3 | 4 | 5 | 4 |
|   |   | 8 |   | 8 | 8 | 7 | 8 |   | 7 |   | 4 |   |
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| 8 |   | 8 |   | 8 | 9 | 8 | 9 |   | 8 | 9 | 9 |   |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 |   | 3 | 5 | 6 | 2 | 2 | 1 | 2 | 4 | 1 | 1 |   |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|
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|   |   |   |   |   |   |   |   |   |   |   | 7 | 6 |
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|   |   |   |   |   | 7 |   | 7 | 9 | 7 | 9 | 7 | 9 |
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|   |   |   |   |   |   |   | 6 | 6 |   |   | 6 |   |

|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
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|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 3 |   |
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|                |            |                  |                  |                  |                    |                |
|----------------|------------|------------------|------------------|------------------|--------------------|----------------|
| 4 5<br>7       | 4 5<br>7   | 4<br>2           | 4 2 6<br>7 9     | 8 3              | 1 6 1 2<br>7 9 7 6 | 2<br>7 9       |
| 4<br>7 8       | 9          | 1                | 5 2 6 2<br>7 7 4 | 3 2              | 6<br>7 8           | 2<br>7 8       |
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|               |          |            |                    |            |              |                  |                  |
|---------------|----------|------------|--------------------|------------|--------------|------------------|------------------|
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| 1 3<br>5 9    | 8        | 1 3<br>5 7 | 1 2 2 6<br>6 9     | 1<br>6 9   | 1 5 6<br>7   | 4                | 1 5<br>7         |
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|            |              |          |                    |            |                    |                  |
|------------|--------------|----------|--------------------|------------|--------------------|------------------|
| 8          | 1 3<br>5     | 4        | 1 3 1 5<br>7 7     | 9          | 2 6 1<br>5         | 5                |
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| 9          | 1 2<br>5     | 1 2 3    | 6 8 1 3<br>5       | 4 7        | 1 3<br>5           | 8 9              |
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| 1 3<br>6 4 | 9            | 8        | 1 1 2 1<br>4 5 7   | 6 4 5 6    | 1 1 2 3 1 2<br>6 9 | 6 9              |

|          |            |            |                    |                  |                  |
|----------|------------|------------|--------------------|------------------|------------------|
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| 1        | 5 3<br>8 9 | 2 3<br>8 9 | 5 6 3<br>8 9 7     | 4                | 2 2 2<br>5 6 7 8 |

|            |                      |          |                          |            |                  |            |
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| 2 3<br>9   | 6                    | 5        | 2 3<br>8 9               | 1 3<br>8 9 | 2 4 4<br>7 8 9   | 2<br>7 8   |
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| 5          | 1 4<br>8 9           | 1 8 9    | 2 6 4 6<br>8             | 7          | 1 2<br>4 6       | 3 4 6<br>9 |
| 1 3<br>6 9 | 1 5<br>7 9           | 4        | 1 3 5 6 5 6<br>7 8 9 7 8 | 2          | 3 6 5 6<br>7 8   | 6          |
| 2 3<br>6 9 | 5 3<br>7 9           | 2 3<br>9 | 3 3 3<br>7 8 9 7 8       | 3 8 9      | 4 3 4 5 6<br>7 8 | 1          |
| 8          | 1 3 1 3<br>5 7       | 1 3<br>7 | 5 6 5 6<br>7             | 4          | 9                | 2 6<br>7   |

|                        |                  |            |                        |                  |                |
|------------------------|------------------|------------|------------------------|------------------|----------------|
| 1<br>8                 | 3 4 5            | 2 5<br>7   | 1 6                    | 6 9<br>8         | 2 4 5          |
| 5 6 5 6<br>7 8 9 7 8 9 | 2                | 4 5 3<br>9 | 6 6 5 6<br>7 8 8       | 1                |                |
| 1 5 6<br>7 9           | 1 5 6 4 5<br>7 9 | 8          | 1 2 6 4 6 4 5 6<br>9 7 | 2 3 2 3<br>4 5 7 |                |
| 1 2<br>5 9             | 1 2<br>5 9       | 3 5 9      | 6 1 3 2<br>4 9         | 1 7 8            |                |
| 1 2<br>7 9             | 1 2<br>7 9       | 8          | 2 3 1 3<br>7 9         | 5                | 1 2 3 2 3<br>4 |
| 1 2<br>7 9             | 4                | 3 7 9      | 2 3 1 3<br>7 9         | 8                | 5 2 3<br>6     |
| 2 4 5<br>8             | 2 5<br>8         | 1 5 8      | 6 7                    | 3 4 5<br>8       | 9              |
| 3                      | 2 5<br>8         | 6 5 8 9    | 4 5 9 4                | 2 1<br>7 8       | 5 7            |
| 4 5<br>8 9             | 5 8 9            | 7          | 1 2 3<br>8             | 4 6 4 5 6<br>8   | 4 5            |

|               |          |               |            |            |          |          |               |               |               |          |   |
|---------------|----------|---------------|------------|------------|----------|----------|---------------|---------------|---------------|----------|---|
| 1<br>4 5<br>8 | 2        | 1<br>4 5<br>7 | 3<br>7 8 9 | 4<br>7 8 9 | 6<br>7 9 | 4<br>7 8 | 4<br>7 8      | 1<br>4 6<br>7 | 3<br>4 7      | 1<br>4 7 | 3 |
| 1<br>4 8      | 1<br>7 8 | 1<br>4 7      | 4<br>7 8   | 6<br>7 8   | 5        | 3        | 1<br>4 6      | 2             | 9             |          |   |
| 4 6           | 9        | 4<br>7        | 3<br>6     | 1          | 2        | 4<br>7   | 5             | 8             | 4<br>7        | 3        |   |
| 9             | 5<br>7 8 | 4<br>7        | 5<br>7     | 4<br>7     | 5<br>7   | 4<br>7   | 2<br>4 8      | 3             | 6             |          |   |
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| 7             | 1<br>5   | 8             | 4<br>5     | 3<br>4     | 1<br>3   | 6        | 1<br>2 3<br>4 | 9             | 1<br>2 3<br>4 |          |   |
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|               |               |               |               |               |                 |          |                 |            |          |  |  |
|---------------|---------------|---------------|---------------|---------------|-----------------|----------|-----------------|------------|----------|--|--|
| 2 3<br>9      | 2<br>8 9      | 4             | 3<br>5 6<br>7 | 3<br>5 6<br>9 | 3<br>5 6<br>7   | 1        | 2<br>6 8 9      | 2<br>3 5 6 |          |  |  |
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| 8             | 4             | 1<br>2 5      | 9             | 2<br>5 6<br>7 | 5<br>6          | 3<br>5   | 2<br>5          | 3<br>7     | 1        |  |  |
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| 6             | 1<br>2 5<br>9 | 2<br>5        | 1<br>2 3<br>5 | 3<br>5        | 2<br>3 5<br>7 8 | 3<br>7 8 | 2<br>5 8        | 4          | 1<br>7   |  |  |
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| 1<br>2 4      | 1<br>2 8      | 2<br>8        | 1<br>2 8      | 1<br>3        | 7               | 9        | 6               | 5          | 4<br>2 3 |  |  |
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|        |               |               |               |                 |          |               |                 |                 |                 |  |  |
|--------|---------------|---------------|---------------|-----------------|----------|---------------|-----------------|-----------------|-----------------|--|--|
| 6      | 2             | 1             | 4<br>3        | 8               | 7        | 5             | 4<br>9          | 3<br>9          |                 |  |  |
| 5      | 3             | 4             | 1<br>9        | 1<br>9          | 2        | 6             | 7<br>8          | 7<br>8          |                 |  |  |
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| 8      | 5<br>9        | 2<br>5 7<br>9 | 2<br>5 9      | 6               | 5<br>9   | 3<br>7        | 1<br>2 3<br>7   | 1<br>2 3<br>5 7 | 4               |  |  |
| 4<br>7 | 3<br>4 5<br>9 | 2<br>5 7<br>9 | 2<br>5 9      | 2<br>3 9        | 1        | 8             | 6               | 5<br>7          | 3               |  |  |
| 1      | 6             | 2<br>5        | 8             | 7               | 4        | 9             | 2<br>5          | 3<br>5          |                 |  |  |
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| 2      | 4<br>5 9      | 5<br>7 9      | 6             | 1<br>4          | 3<br>9   | 3<br>8 9      | 1<br>4 7        | 1<br>3 7<br>8 9 | 1<br>5 7<br>8 9 |  |  |
| 4<br>7 | 3<br>1        | 6             | 5<br>7 9      | 4<br>9          | 5<br>8 9 | 3<br>8 9      | 4<br>7          | 4<br>5 7<br>8 9 | 2               |  |  |

|          |               |               |          |               |               |                 |                 |                   |                 |  |  |
|----------|---------------|---------------|----------|---------------|---------------|-----------------|-----------------|-------------------|-----------------|--|--|
| 2<br>4 6 | 1<br>2 4<br>8 | 1<br>2 4<br>8 | 6<br>9   | 1<br>2 3<br>6 | 1<br>5 8      | 3<br>8          | 1<br>5 6<br>8   | 7                 | 1<br>4 5 6<br>8 |  |  |
| 9        | 1<br>2 7<br>8 | 5             | 7<br>8   | 1<br>2 6      | 4             | 1<br>8          | 1<br>6          | 3                 |                 |  |  |
| 4<br>7   | 6<br>3        | 1<br>4 6<br>8 | 5<br>7 8 | 1<br>6        | 5<br>8        | 2               | 1<br>4 5<br>8 9 | 1<br>4 5 6<br>8 9 |                 |  |  |
| 2<br>4 5 | 3<br>9        | 2<br>4 8      | 2<br>3 4 | 7             | 2<br>3 5      | 1<br>5 8        | 3<br>6          | 6                 | 1<br>2 4<br>5 8 |  |  |
| 2<br>4 6 | 2<br>4 8      | 7             | 1        | 5             | 2<br>3 6<br>9 | 3<br>8 9        | 4<br>8 9        | 4<br>8 9          |                 |  |  |
| 1        | 2<br>4 5      | 2<br>4 6      | 2<br>3 4 | 8             | 2<br>3 6<br>9 | 3<br>5 7<br>9   | 4<br>5 9        | 4<br>5 9          |                 |  |  |
| 7<br>5   | 3<br>6        | 1<br>9        | 3<br>5 8 | 1<br>3 8      | 1<br>5 8      | 3<br>4          | 2<br>7 8 9      |                   |                 |  |  |
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|          |                 |          |                 |                 |            |            |            |            |  |  |  |
|----------|-----------------|----------|-----------------|-----------------|------------|------------|------------|------------|--|--|--|
| 5<br>8   | 5<br>6 9        | 6<br>8 9 | 1<br>7 8 9      | 4               | 3          | 1<br>7 5 9 | 5<br>7 9   | 2          |  |  |  |
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| 4        | 2<br>6 9        | 7        | 1<br>6 9        | 1<br>6 9        | 5          | 1<br>4 9   | 4<br>3 9   | 8          |  |  |  |
| 2<br>5 8 | 1<br>2 5 6<br>9 | 6<br>8 9 | 1<br>8 9        | 3               | 1<br>6 8 9 | 2<br>5 7   | 2<br>5 7   | 4          |  |  |  |
| 3        | 2<br>5 4        | 8 9      | 4<br>7 8 9      | 7 8 9           | 4<br>8 9   | 2<br>5     | 1          | 6          |  |  |  |
| 1<br>6   | 7               | 4 6      | 1<br>4 6        | 5               | 2          | 3          | 8          | 9          |  |  |  |
| 7        | 4               | 3        | 1<br>5 6<br>8 9 | 1<br>2 6<br>8 9 | 1<br>6 8 9 | 2<br>5 8 9 | 2<br>5 6 9 | 1<br>5     |  |  |  |
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| 9        | 1<br>6          | 2        | 4<br>5 6<br>8   | 1<br>6 8        | 7          | 4<br>5 8   | 4<br>5 6   | 3<br>1 5 3 |  |  |  |

|            |            |            |          |          |              |            |            |              |          |  |  |
|------------|------------|------------|----------|----------|--------------|------------|------------|--------------|----------|--|--|
| 4<br>5 7 8 | 5<br>6 7 8 | 4<br>5 6 7 | 5<br>8   | 3<br>4 5 | 9            | 2<br>6     | 1          | 4<br>5 8     | 3        |  |  |
| 2          | 3          | 1          | 6        | 4<br>5 7 | 4<br>5 7 8   | 4<br>8     | 4<br>5 8   | 9            |          |  |  |
| 9          | 5<br>6 8   | 4<br>5 6   | 1<br>5 8 | 3<br>4 5 | 2<br>3 4 5 8 | 2<br>6     | 7          | 4<br>5 8     | 3        |  |  |
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| 1          | 7<br>8     | 6<br>7     | 4<br>6   | 3<br>6   | 2            | 3<br>7 8   | 5          | 9            | 4<br>7 8 |  |  |
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| 3          | 1          | 2          | 5<br>7   | 8        | 4            | 6          | 9          | 4<br>5 6 7   | 4<br>5   |  |  |
| 6          | 4          | 5<br>7     | 9        | 1<br>5 7 | 3<br>7       | 5<br>7     | 1<br>3 7 8 | 5<br>8       | 3<br>2   |  |  |

|     |                  |                  |                |                  |                  |                    |                  |                  |
|-----|------------------|------------------|----------------|------------------|------------------|--------------------|------------------|------------------|
| 1   | 4 5 6            | 2                | 5 <sup>3</sup> | 3 <sup>3</sup>   | 3 <sup>3</sup>   | 4 5 6              | 9                | 7                |
| 8   | 7 <sup>5 6</sup> | 3                | 4              | 7 <sup>2 6</sup> | 7 <sup>2 6</sup> | 2 5 6              | 1                |                  |
| 9   | 4 5 6            | 4 5 6            | 5              | 2                | 1                | 3                  | 2                | 4 5 6            |
| 5 6 | 4 <sup>1 4</sup> | 9                | 2              | 7 <sup>3 6</sup> | 7 <sup>3 6</sup> | 7 <sup>1 5 6</sup> | 5 6              | 8                |
| 5 6 | 3 <sup>1</sup>   | 9                | 8              | 4                | 7 <sup>6</sup>   | 7 <sup>1 5 6</sup> | 5 6              | 2                |
| 7   | 2                | 8                | 1              | 3 <sup>6 9</sup> | 5                | 4 <sup>6 4</sup>   | 3 <sup>6 4</sup> | 3 <sup>6 9</sup> |
| 2 3 | 1 <sup>6 9</sup> | 1 <sup>6 9</sup> | 3              | 5                | 2 3              | 2 <sup>4 6</sup>   | 2 3              | 3                |
| 2 3 | 5 6              | 5 6              | 3              | 2 3              | 4                | 2 <sup>6</sup>     | 1                | 4 6              |
| 4   | 8                | 7                | 6              | 1                | 2 3              | 2 <sup>5 9</sup>   | 2 3              | 5 <sup>3 9</sup> |

|                |     |       |                  |                    |                    |                  |                      |                  |
|----------------|-----|-------|------------------|--------------------|--------------------|------------------|----------------------|------------------|
| 3              | 7   | 2     | 5                | 1 <sup>4</sup>     | 9                  | 6                | 1 <sup>4</sup>       | 8                |
| 1 <sup>4</sup> | 8   | 6     | 3                | 1 <sup>2 4</sup>   | 1 <sup>2 4</sup>   | 1 <sup>7 9</sup> | 5                    | 1 <sup>7 9</sup> |
| 1 <sup>4</sup> | 4 5 | 4 5   | 1                | 1 <sup>4 7 8</sup> | 6                  | 2                | 1 <sup>4 7</sup>     | 3                |
| 4              | 4 5 | 4 5   | 1 <sup>2 9</sup> | 1 <sup>2 3 4</sup> | 1 <sup>2 3 4</sup> | 8                | 6                    | 1 <sup>5 7</sup> |
| 4              | 4 5 | 1     | 2                | 2 <sup>6 4 8</sup> | 2                  | 3                | 9                    | 5                |
|                | 6   | 3     | 1                | 9                  | 5                  | 4                | 1 <sup>7</sup>       | 2                |
| 2              | 4   | 4     | 6                | 5                  | 1                  | 8                | 1 <sup>4 6 7 9</sup> |                  |
| 5              | 1   | 7 8 9 | 4                | 2 3                | 2 3                |                  | 2 3                  | 6                |
| 6              | 4   | 3     | 1 2              | 1 2 3              | 7                  | 5                | 2 3                  | 1 <sup>4 9</sup> |

|       |                  |                |       |                |     |     |                |   |
|-------|------------------|----------------|-------|----------------|-----|-----|----------------|---|
| 5     | 1 <sup>5 8</sup> | 2              | 6     | 1 <sup>7</sup> | 3   | 4 5 | 4              | 2 |
| 7     | 4                | 5 <sup>3</sup> | 2     | 2              | 2   | 3   | 1              | 3 |
| 3     | 1 <sup>3 6</sup> | 2              | 4     | 1              | 5   | 9   | 3              | 2 |
| 5 6   | 5 6              | 6              | 3     | 4              | 9   | 5 6 | 2              | 1 |
| 1     | 9                | 5 <sup>3</sup> | 2     | 2              | 6   | 7   | 5 <sup>3</sup> | 4 |
| 2     | 3                | 4              | 1     | 5              | 1   | 3   | 3              | 3 |
| 4 5 6 | 5 6              | 1              | 7 8 9 | 8 9            | 2   | 4 5 | 5              | 3 |
| 4 5   | 3                | 2              | 1     | 6              | 1   | 3   | 7              | 3 |
| 4     | 3                | 3              | 5     | 2 3            | 1 2 | 1   | 3              | 3 |

|     |       |       |       |       |     |     |     |     |
|-----|-------|-------|-------|-------|-----|-----|-----|-----|
| 1 2 | 1     | 2     | 3     | 9     | 3   | 5 6 | 2 3 | 1 2 |
| 4 5 | 5 6   | 4 5 6 | 7 8   | 2     | 5   | 7   | 8   | 4 5 |
| 1   | 1     | 3     | 6     | 2     | 5   | 7   | 5 6 | 1   |
| 4 5 | 5 6   | 8     | 7 8   | 4     | 1   | 9   | 2 3 | 2   |
| 2   | 7     | 5 6   | 3     | 4     | 1   | 9   | 8   | 5   |
| 4 5 | 3     | 4 5   | 4     | 8     | 4   | 1   | 4   | 6   |
| 1   | 3     | 1     | 1 2 3 | 1     | 3   | 6   | 2 3 | 5   |
| 4   | 7 8 9 | 8 9   | 4     | 7 8 9 | 4   | 5   | 4   | 8 9 |
| 6   | 1     | 3     | 1 2 3 | 5     | 4   | 7   | 2   | 8 9 |
| 5   | 4     | 5 6   | 3     | 2     | 7   | 1   | 5   | 9   |
| 2   | 1     | 5 7   | 4     | 6     | 4   | 2   | 6   | 3   |
| 8 9 | 8 9   | 1     | 5     | 7     | 8 9 | 8   | 4   | 2   |
| 2 3 | 3     | 2     | 1     | 3     | 1   | 3   | 4   | 5   |
| 7   | 9     | 9     | 7     | 9     | 9   | 8   | 9   | 9   |

|       |                  |       |     |     |                  |     |                    |     |
|-------|------------------|-------|-----|-----|------------------|-----|--------------------|-----|
| 2     | 1 <sup>5 7</sup> | 9     | 5 6 | 4   | 7 <sup>5 6</sup> | 8   | 1 <sup>5 6 7</sup> | 5 6 |
| 4     | 8                | 5     | 4   | 1   | 2 <sup>5 6</sup> | 3   | 9                  | 2   |
| 1     | 3                | 1     | 3   | 9   | 8                | 1 2 | 4                  | 2   |
| 5 6   | 9                | 2     | 2   | 1 2 | 3                | 4   | 1 2                | 2   |
| 4 5   | 8                | 2 3   | 4 5 | 6   | 1 2              | 1 2 | 1 2                | 9   |
| 4 5 6 | 2                | 1     | 4 5 | 8   | 2                | 2   | 2                  | 3   |
| 3     | 4                | 5     | 7   | 2 3 | 2                | 6   | 6                  | 1   |
| 1     | 3                | 1 2 3 | 2 3 | 2   | 1 2 3            | 1 2 | 2                  | 6   |
| 7 8 9 | 6                | 2     | 4   | 2   | 1 2              | 1 2 | 5                  | 3   |

|     |       |     |     |       |       |     |     |     |
|-----|-------|-----|-----|-------|-------|-----|-----|-----|
| 1   | 2 3   | 2 3 | 7   | 4     | 2     |     | 3   | 6   |
| 9   | 3     | 3   | 8   | 1     | 5 6   | 4   | 1   | 2   |
| 2   | 2     | 2   | 3   | 1 2   | 1 2   | 5   | 1   | 1   |
| 6   | 1 2 3 | 2 3 | 9   | 1 2 3 | 5     | 8   | 4   | 7   |
| 2 3 | 2 3   | 4   | 8   | 2 3   | 2 3   | 1   | 5   | 3   |
| 5   | 1 2 3 | 2 3 | 1   | 1 2 3 | 1 2 3 | 2   | 6   | 3   |
| 2 3 | 2 3   | 6   | 1   | 5     | 3     | 7   | 4   | 5   |
| 8   | 8 9   | 8 9 | 8 9 | 8 9   | 8 9   | 8 9 | 8 9 | 8 9 |
| 4   | 3     | 3   | 2   | 1     | 3     | 1   | 1   | 5   |
| 2   | 5     | 2   | 1   | 6     | 4     | 3   | 1 2 | 1   |

|               |                     |                   |          |                 |             |               |               |             |
|---------------|---------------------|-------------------|----------|-----------------|-------------|---------------|---------------|-------------|
| 1<br>5<br>9   | 1 2<br>5 6<br>8 9   | 3                 | 4        | 2 5 6<br>8 9    | 5 6<br>9    | 1<br>7 8      | 1 2<br>7 8 9  | 2<br>9      |
| 1<br>4 5<br>9 | 1 2<br>4 5 6<br>8 9 | 1 2<br>4<br>8 9   | 6<br>7   | 2<br>5 6<br>8 9 | 5 6<br>9    | 1<br>4<br>8   | 3<br>4        | 2<br>9      |
| 7             | 2<br>4<br>8 9       | 2<br>4<br>8 9     | 2<br>8   | 3               | 1           | 5             | 4<br>8 9      | 6           |
| 2             | 1 3<br>4 5 6<br>9   | 1<br>4<br>6 9     | 1<br>5   | 1<br>6          | 8           | 1 3<br>4<br>6 | 1<br>4<br>6   | 7           |
| 1 3<br>5      | 1 3<br>5 6<br>7 8   | 1<br>6<br>7 8     | 9        | 4               | 3<br>6<br>7 | 1 3<br>8<br>6 | 1 2<br>6<br>8 | 2 3<br>5    |
| 1 3<br>4 5    | 1 3<br>4 5 6<br>7 8 | 1 3<br>4<br>6 7 8 | 1 2<br>5 | 1 2<br>6<br>7   | 3<br>6<br>7 | 9             | 1<br>4<br>8   | 3<br>4 5    |
| 6             | 1 3<br>4<br>7 9     | 1<br>4<br>7 9     | 1<br>8   | 1<br>7 8 9      | 4<br>7 9    | 2             | 5             | 3<br>4<br>9 |
| 8             | 4<br>7<br>9         | 5                 | 3        | 7<br>9          | 2           | 4 6<br>7      | 4 6<br>7 9    | 1           |
| 1 3<br>4<br>9 | 1 2 3<br>4<br>7 9   | 1 2<br>4<br>9     | 6        | 1<br>5<br>7 9   | 4 5<br>7 9  | 3<br>4<br>7 9 | 8             |             |

|         |         |           |         |         |             |         |           |         |
|---------|---------|-----------|---------|---------|-------------|---------|-----------|---------|
| 1<br>7  | 6<br>7  | 1 5 6     | 1 4 5   | 1 4 3 6 | 8           | 3 5 6   | 2         | 9       |
| 4       | 2 6     | 1 2 5 6 9 | 7       | 1 3 6 9 | 1 5 6 9     | 3 5 6 8 | 3 5 6 8   | 3 5 6   |
| 3 9     | 3 6 8   | 3 5 6 8 9 | 5 9     | 2       | 5 6 9       | 1       | 4 7       | 4 7     |
| 8       | 5       | 2 4 9     | 3       | 1 4 6 9 | 1 2 4 6 9   | 7       | 4 6       | 2 4 6   |
| 6       | 2 3 4 7 | 2 3 4     | 2 4 5 8 | 4 7 8   | 2 4 5 7     | 2 3 5   | 9         | 1       |
| 2 3 7 9 | 1       | 2 3 4 9   | 2 4 5 9 | 4 6 7 9 | 2 4 5 6 7 9 | 2 3 5 6 | 3 4 5 6   | 8       |
| 5       | 2 3 6 8 | 1 2 3 6 8 | 1 2 8 9 | 1 7 8 9 | 1 2 7 9     | 4       | 1 3 6 7 8 | 2 3 6 7 |
| 1 2     | 9       | 1 2 4 6 8 | 1 2 4 8 | 1 4 7 8 | 3           | 2 5 6 8 | 1 5 6 7 8 | 2 5 6 7 |
| 1 2 3 4 | 2 3 4 8 | 7         | 6       | 5       | 1 2 4       | 9       | 1 3 8     | 2 3     |

|       |     |     |     |       |       |     |       |     |
|-------|-----|-----|-----|-------|-------|-----|-------|-----|
| 6     | 1 2 | 1 3 | 9   | 7     | 4 2 3 | 8   | 1 3   | 2 3 |
| 1 3   | 9   | 1 3 | 5   | 3 2 3 | 1 2 3 | 1 3 | 2 3   |     |
| 7 8   |     | 8   | 4 8 | 6 4   | 4     | 7   | 6 4   | 6   |
| 4     | 2   | 5 3 | 6   | 3 6   | 1     | 9   | 3 2 3 | 5 6 |
| 7 8   |     | 8   | 8 6 | 8     |       | 7   | 5 6   | 7   |
| 1 3   | 5   | 2   | 1 4 | 1 3   | 8     | 6   | 1 3   | 3   |
| 9     |     |     | 4   | 9     |       | 7   | 4 7   |     |
| 1 3   | 1 6 | 1 3 | 2   | 1 3   | 3 1 3 |     | 5     | 5   |
| 7 9   | 7   | 6 9 | 4 9 | 4 7   | 4     | 4   | 8     | 8   |
| 1 3   | 1   | 1 3 | 1 4 | 5     | 6     | 1 3 | 2     | 9   |
| 7 8   | 7 8 | 8   | 4 7 |       |       | 4   |       |     |
| 1     | 5 8 | 3   | 1 6 | 2     | 4 5   | 7   | 9     | 6   |
|       |     | 8   | 8 6 | 8     |       |     | 8     |     |
| 1     | 1 6 | 1   | 1 6 | 1     | 5     | 2 3 | 4     | 2 3 |
| 5 8 9 | 8   | 8 9 | 7 8 | 8 7   |       |     | 8     | 1   |
| 2     | 4   | 7   | 3   | 6 8   | 9     | 5   | 6 8   |     |

|                        |                            |                          |                          |                        |                          |                          |                        |
|------------------------|----------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|------------------------|
| 4                      | <div>6<br/>8 9</div>       | 5                        | 7                        | 2                      | 3                        | 1                        | <div>6<br/>9 8 9</div> |
| 1                      | <div>2 3<br/>6 9 7</div>   | <div>6 4<br/>6 9</div>   | 8                        | <div>4 5<br/>7 9</div> | <div>5 6<br/>4 7</div>   | <div>2 3<br/>4 7</div>   | <div>2 6<br/>9 7</div> |
| <div>2<br/>7</div>     | <div>2 3<br/>6 8 7 8</div> | <div>1 4<br/>6 7 8</div> | <div>1 4<br/>5 6 9</div> | 9                      | <div>5 6<br/>7 8 4</div> | <div>2 3<br/>4 7 8</div> | <div>2 6<br/>7 8</div> |
| 3                      | 5                          | 2                        | <div>1 4<br/>6 9</div>   | <div>1 4<br/>6 9</div> | <div>1 4<br/>6 9</div>   | <div>6<br/>8</div>       | <div>7<br/>4 6 8</div> |
| 9                      | 7                          | <div>1 4<br/>6</div>     | 8                        | <div>4 6<br/>7</div>   | 2                        | <div>3<br/>4</div>       | 5                      |
| 8                      | <div>4 6<br/>7</div>       | <div>1 4<br/>6 5 7</div> | <div>3 5<br/>7</div>     | <div>3 5<br/>7</div>   | <div>5<br/>9</div>       | <div>1 2<br/>6 4</div>   | <div>2 6<br/>4 9</div> |
| <div>2 5<br/>7</div>   | <div>2<br/>9 7 9</div>     | <div>3 5<br/>7</div>     | <div>3 5<br/>7</div>     | 6                      | 4                        | 8                        | 1                      |
| <div>5 6<br/>7</div>   | 1                          | 3                        | <div>4<br/>9</div>       | <div>4 5<br/>7 9</div> | 8                        | <div>2<br/>6 9 7</div>   | <div>6<br/>9</div>     |
| <div>6 4<br/>7 8</div> | <div>4<br/>8</div>         | 2                        | <div>1<br/>7 9 7</div>   | <div>1<br/>7</div>     | <div>6<br/>9</div>       | 5                        | 3                      |

|       |       |     |       |       |       |   |     |       |
|-------|-------|-----|-------|-------|-------|---|-----|-------|
| 1     | 4 5 6 | 2   | 7 8   | 4 5 6 | 7 8   | 6 | 9   | 4 8   |
| 4 6   | 4 6   | 7   | 2     | 4 6   | 2     | 5 | 1 3 | 1 3   |
| 8     |       |     | 9     |       | 9     |   | 4 8 | 4 8   |
| 9     | 4 5 6 | 4 6 | 7 8   | 4 5 6 | 1     | 6 | 2   | 4 8   |
|       |       | 8   |       |       |       | 7 |     |       |
| 4 5   | 1     | 4   | 2 3   | 2     | 6     | 2 | 3   | 2 3   |
|       |       | 9   | 7 8 9 | 7 8 9 |       | 9 | 4 5 | 4 5   |
|       |       |     |       |       |       |   | 7   | 7     |
| 4 5 6 | 2     | 4   | 3     | 1     | 3     | 8 | 3   | 3     |
|       |       | 6   | 7 9   | 7 9   |       |   | 4 5 | 4 5   |
|       |       | 9   |       |       |       |   | 7   | 7     |
| 7     | 8     | 3   | 4     | 2     | 5     | 1 | 6   | 2 3   |
|       |       | 9   |       | 9     |       |   |     | 9     |
| 2     | 6     | 1   | 5     | 3     | 7 8 9 | 4 | 7 8 | 6     |
|       | 9     |     |       |       |       |   |     | 7 8 9 |
| 3     | 7     | 6   | 1     | 2     | 4     | 2 | 5   | 2     |
|       |       | 8   |       | 8 9   |       | 9 | 8   | 5 6   |
|       |       |     |       |       |       |   |     | 8 9   |
| 4     | 4     | 5   | 6     | 2     | 2     | 3 | 1   | 1 2   |
| 8     |       |     |       | 7 8 9 | 7 8 9 |   | 7 8 | 7 8 9 |
|       | 9     |     |       |       |       |   |     |       |

|                               |                                 |                               |                               |                                 |                               |                             |                                   |                               |
|-------------------------------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-----------------------------|-----------------------------------|-------------------------------|
| <sup>4 5</sup> <sub>9</sub>   | 6                               | 8                             | 2                             | <sup>4 5</sup> <sub>9</sub>     | <sup>3</sup> <sub>4</sub>     | <sup>1</sup> <sub>4 5</sub> | <sup>1</sup> <sub>5 3</sub>       | 7                             |
| <sup>4 5</sup> <sub>7 9</sub> | <sup>2</sup> <sub>7</sub>       | <sup>2 3</sup> <sub>5 9</sub> | <sup>1</sup> <sub>7 9</sub>   | <sup>4 5</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>4</sub>   | <sup>1 2 3</sup> <sub>5 8 6</sub> | <sup>6</sup> <sub>8</sub>     |
| 1                             | <sup>2</sup> <sub>4 5</sub>     | <sup>2 3</sup> <sub>5 7</sub> | 6                             | <sup>4 5</sup> <sub>7</sub>     | <sup>3</sup> <sub>7</sub>     | 8                           | <sup>2 3</sup> <sub>5 4 5</sub>   | <sup>3</sup> <sub>8 9</sub>   |
| 2                             | 3                               | <sup>1</sup> <sub>7 5 6</sub> | <sup>1</sup> <sub>7 8</sub>   | <sup>6</sup> <sub>7</sub>       | 9                             | <sup>6</sup> <sub>8</sub>   | <sup>4</sup> <sub>1 5 6</sub>     | <sup>1</sup> <sub>8</sub>     |
| <sup>6</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>7</sub>     | <sup>6</sup> <sub>4 7 8</sub> | <sup>4</sup> <sub>6 7</sub>     | 5                             | 2                           | <sup>1 3</sup> <sub>9 8</sub>     | <sup>1</sup> <sub>3 6</sub>   |
| <sup>5 6</sup> <sub>8 9</sub> | <sup>1</sup> <sub>5 8</sub>     | 4                             | 3                             | <sup>2</sup> <sub>6</sub>       | <sup>1 2</sup> <sub>6</sub>   | 7                           | <sup>1</sup> <sub>5 9</sub>       | <sup>1</sup> <sub>5 6 8</sub> |
| 3                             | <sup>2</sup> <sub>4 5</sub>     | <sup>2</sup> <sub>5 6</sub>   | <sup>4 5</sup> <sub>7 9</sub> | <sup>1</sup> <sub>4 7</sub>     | <sup>2</sup> <sub>6 4 5</sub> | 8                           | <sup>4 5</sup> <sub>9</sub>       | <sup>1</sup> <sub>9</sub>     |
| <sup>4 5 6</sup> <sub>8</sub> | <sup>1 2</sup> <sub>4 5 8</sub> | <sup>1 2</sup> <sub>5 6</sub> | <sup>4 5</sup> <sub>9</sub>   | <sup>2</sup> <sub>4 5 6 9</sub> | <sup>2</sup> <sub>4 6</sub>   | 3                           | 7                                 | <sup>1</sup> <sub>4 5 9</sub> |
| <sup>4 5</sup> <sub>7</sub>   | 9                               | <sup>1</sup> <sub>5 7</sub>   | <sup>4 5</sup> <sub>7</sub>   | 8                               | 3                             | <sup>1</sup> <sub>4 5</sub> | 6                                 | 2                             |

|                               |                                   |                               |                                 |                               |                                 |                               |                                 |                                 |
|-------------------------------|-----------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|
| <sup>7</sup> <sub>5</sub>     | 2                                 | <sup>5</sup> <sub>7</sub>     | <sup>3</sup> <sub>8</sub>       | 9                             | 1                               | 4                             | <sup>3</sup> <sub>6 8</sub>     | <sup>3</sup> <sub>6</sub>       |
| <sup>4</sup> <sub>9</sub>     | <sup>4</sup> <sub>9</sub>         | 8                             | 6                               | <sup>5</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>5</sub>     | 7                             | <sup>2 3</sup> <sub>5</sub>     | 1                               |
| 3                             | 6                                 | 1                             | <sup>2</sup> <sub>4 5 8</sub>   | <sup>4 5</sup> <sub>8</sub>   | 7                               | <sup>2</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>5 9</sub>     | <sup>2</sup> <sub>5 8 9</sub>   |
| 8                             | <sup>4 5</sup> <sub>9</sub>       | <sup>2 3</sup> <sub>5 9</sub> | <sup>1</sup> <sub>4 5</sub>     | <sup>3</sup> <sub>4 5</sub>   | 6                               | <sup>1 2 3</sup> <sub>9</sub> | <sup>7</sup> <sub>5 9</sub>     | <sup>2 3</sup> <sub>5 9</sub>   |
| <sup>5</sup> <sub>9</sub>     | 1                                 | 6                             | 7                               | 2                             | <sup>5</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>8 9</sub>   | <sup>5</sup> <sub>9</sub>       | 4                               |
| <sup>2</sup> <sub>4 5</sub>   | <sup>2 3</sup> <sub>4 5 7 9</sub> | <sup>1</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>4 5</sub>     | <sup>1</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>4 5 8 9</sub> | 6                             | <sup>1 2 3</sup> <sub>5 9</sub> | <sup>2 3</sup> <sub>5 8 9</sub> |
| 6                             | 8                                 | <sup>2</sup> <sub>7</sub>     | 9                               | <sup>1</sup> <sub>4 7</sub>   | <sup>3</sup> <sub>4</sub>       | <sup>2 3</sup> <sub>7</sub>   | <sup>1 2 3</sup> <sub>4 7</sub> | <sup>2 3</sup> <sub>7</sub>     |
| <sup>1 2</sup> <sub>7 9</sub> | <sup>5</sup> <sub>7 9</sub>       | 4                             | <sup>1 2 3</sup> <sub>5 7</sub> | <sup>1</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5</sub>     | <sup>1 2 3</sup> <sub>9</sub> | 8                               | <sup>2</sup> <sub>7 9</sub>     |
| <sup>1 2</sup> <sub>7 9</sub> | <sup>3</sup> <sub>5 7 9</sub>     | <sup>2</sup> <sub>7 9</sub>   | <sup>1 2</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>4 5 8</sub> | <sup>2</sup> <sub>4 5 8</sub>   | <sup>1 2</sup> <sub>9</sub>   | <sup>1 2</sup> <sub>4 6 7</sub> | <sup>2</sup> <sub>6 7 9</sub>   |

|                                 |                                 |                                 |                             |                               |                               |                                 |                               |                               |
|---------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|
| <sup>1</sup> <sub>4 7</sub>     | <sup>1</sup> <sub>4 7</sub>     | <sup>3</sup> <sub>8</sub>       | <sup>1</sup> <sub>7 9</sub> | <sup>1</sup> <sub>6 9</sub>   | 5                             | <sup>1 2 3</sup> <sub>7 9</sub> | <sup>3</sup> <sub>4 6 9</sub> | <sup>1 2 3</sup> <sub>9</sub> |
| <sup>1</sup> <sub>4 5 6 7</sub> | <sup>1</sup> <sub>4 7</sub>     | <sup>1</sup> <sub>4 5 6 7</sub> | 2                           | 3                             | <sup>1</sup> <sub>7 9</sub>   | <sup>4</sup> <sub>7 8 9</sub>   | <sup>6</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>8 9</sub>   |
| 9                               | <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>2</sub>       | 4                           | 8                             | <sup>1</sup> <sub>7</sub>     | <sup>6</sup> <sub>5 3</sub>     | <sup>1</sup> <sub>6</sub>     | <sup>1 3</sup> <sub>5 3</sub> |
| <sup>4</sup> <sub>7</sub>       | 6                               | <sup>4</sup> <sub>7</sub>       | <sup>1</sup> <sub>8 9</sub> | <sup>3</sup> <sub>5</sub>     | <sup>1 2 3</sup> <sub>9</sub> | <sup>2 3</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>8 9</sub>   | <sup>2 3</sup> <sub>8 9</sub> |
| <sup>1 2</sup> <sub>9</sub>     | <sup>1 2</sup> <sub>9</sub>     | <sup>3</sup> <sub>6 8</sub>     | 4                           | <sup>3</sup> <sub>6</sub>     | <sup>3</sup> <sub>8</sub>     | 5                               | 7                             | <sup>3</sup> <sub>6</sub>     |
| 8                               | 5                               | 3                               | <sup>6</sup> <sub>9</sub>   | 7                             | <sup>2</sup> <sub>6 9</sub>   | <sup>2</sup> <sub>6 9</sub>     | 1                             | 4                             |
| 3                               | <sup>1 2</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>6 9</sub> | <sup>1 2</sup> <sub>6 9</sub> | 4                             | <sup>1</sup> <sub>5 8 9</sub>   | 7                             | <sup>1</sup> <sub>5 8 9</sub> |
| <sup>1</sup> <sub>4 7</sub>     | <sup>1</sup> <sub>4 7 8 9</sub> | <sup>1</sup> <sub>4 7</sub>     | 5                           | <sup>1</sup> <sub>9 7</sub>   | <sup>3</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>3</sub>       | 2                             | 6                             |
| <sup>1 2</sup> <sub>5 6 7</sub> | <sup>1 2</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>5 6 7</sub>   | <sup>3</sup> <sub>7</sub>   | <sup>1 2</sup> <sub>6 9</sub> | 8                             | 4                               | <sup>3</sup> <sub>9</sub>     | <sup>1</sup> <sub>5 9</sub>   |

|                               |                               |                             |                                 |                             |                             |                             |                                 |                                   |
|-------------------------------|-------------------------------|-----------------------------|---------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------|-----------------------------------|
| 4                             | 7                             | 6                           | 3                               | 2                           | 8                           | 5                           | <sup>1</sup> <sub>9</sub>       | <sup>1</sup> <sub>9</sub>         |
| 5                             | 2                             | 3                           | <sup>1</sup> <sub>6 9</sub>     | <sup>1</sup> <sub>6</sub>   | <sup>6</sup> <sub>9</sub>   | 8                           | 7                               | 4                                 |
| 1                             | <sup>8 9</sup>                | <sup>8 9</sup>              | 7                               | 4                           | 5                           | <sup>3</sup> <sub>6</sub>   | 2                               | <sup>3</sup> <sub>6</sub>         |
| <sup>2 3</sup> <sub>7 8</sub> | <sup>3</sup> <sub>6 8</sub>   | <sup>5</sup> <sub>7 8</sub> | <sup>4 5 6</sup> <sub>9</sub>   | 9                           | 1                           | <sup>4</sup> <sub>8</sub>   | <sup>3</sup> <sub>6 7</sub>     | <sup>5 6</sup> <sub>5 6</sub>     |
| <sup>3</sup> <sub>7 9</sub>   | 4                             | <sup>5</sup> <sub>7 9</sub> | 2                               | 8                           | <sup>3</sup> <sub>6</sub>   | <sup>1</sup> <sub>6 9</sub> | <sup>3</sup> <sub>6 9</sub>     | <sup>1 3</sup> <sub>5 6 7 9</sub> |
| <sup>2 3</sup> <sub>8 9</sub> | <sup>3</sup> <sub>6 8 9</sub> | <sup>1</sup> <sub>8 9</sub> | <sup>4 5 6</sup> <sub>7</sub>   | <sup>3</sup> <sub>5 6</sub> | 7                           | <sup>4</sup> <sub>8 9</sub> | <sup>3</sup> <sub>6 5 6 9</sub> | <sup>3</sup> <sub>9</sub>         |
| <sup>3</sup> <sub>7 8 9</sub> | 1                             | <sup>6</sup> <sub>9 7</sub> | <sup>3</sup> <sub>6</sub>       | 4                           | <sup>3</sup> <sub>6 9</sub> | 5                           | 2                               | <sup>3</sup> <sub>6 9</sub>       |
| <sup>3</sup> <sub>6 9</sub>   | 5                             | 4                           | 8                               | <sup>1</sup> <sub>6</sub>   | <sup>3</sup> <sub>2 7</sub> | 7                           | <sup>1</sup> <sub>6 9</sub>     | <sup>3</sup> <sub>6 9</sub>       |
| <sup>3</sup> <sub>6 9</sub>   | <sup>3</sup> <sub>6 9</sub>   | 2                           | <sup>1</sup> <sub>5 6 9 7</sub> | <sup>1</sup> <sub>5 6</sub> | <sup>3</sup> <sub>6 9</sub> | <sup>1</sup> <sub>6 9</sub> | 4                               | 8                                 |

|               |            |                   |            |            |            |               |            |          |
|---------------|------------|-------------------|------------|------------|------------|---------------|------------|----------|
| 1<br>4 5<br>9 | 2<br>4 5   | 3                 | 1 2<br>4 8 | 7          | 1 2<br>9   | 2<br>4 5<br>9 | 6          | 4 5<br>8 |
| 8             | 2<br>4 6   | 1 2<br>4 6<br>7 9 | 3          | 5          | 1 2<br>6 9 | 2<br>7 9      | 2<br>4 7   | 4        |
| 4 5 6<br>9    | 2<br>4 5 6 | 2<br>4 7          | 2<br>4 8   | 2<br>6 9   | 2<br>6 9   | 2<br>7 8 9    | 3          | 2<br>5 9 |
| 2             | 7          | 1<br>4 6          | 9          | 1<br>4 3   | 5 6        | 8             | 5          | 3<br>4 5 |
| 1<br>4 6      | 3<br>9     | 1<br>4 6          | 5 6        | 1<br>4 3   | 8          | 2<br>4 5<br>7 | 2 3<br>5 7 | 3<br>4 5 |
| 4             | 3<br>8     | 5                 | 2<br>4 7   | 2 3<br>4   | 2 3<br>7   | 6             | 1          | 9        |
| 5<br>9        | 1          | 2<br>8 9          | 2<br>7 8   | 2 3<br>8 9 | 2 3<br>7 9 | 5<br>7 9      | 4          | 6        |
| 4 5 6<br>9    | 3<br>4 5 6 | 4<br>6 8 9        | 1<br>7 8   | 5<br>8 9   | 1<br>7 9   | 5<br>7 9      | 5<br>7 8 9 | 2        |
| 7             | 2 3<br>5   | 2<br>8 9          | 2<br>5 8   | 6          | 4          | 1             | 5<br>8 9   | 3<br>5 8 |

|        |          |          |                   |                 |            |            |          |                 |
|--------|----------|----------|-------------------|-----------------|------------|------------|----------|-----------------|
| 1      | 2<br>4   | 3        | 2<br>5 6<br>7 8 9 | 2<br>5 6<br>8 9 | 2<br>6 8 9 | 4<br>6 7   | 6<br>4 8 | 6               |
| 8      | 2<br>4   | 6        | 1 2 3<br>7        | 1 2 3           | 1 2        | 1<br>4 7   | 3<br>9   | 5               |
| 9      | 7        | 5        | 1<br>6 8          | 3<br>6 8        | 4          | 2          | 3<br>6   | 1<br>6 8        |
| 2<br>7 | 5        | 1        | 2<br>6 8          | 2<br>6 8        | 3          | 9          | 4        | 2<br>6 7 8      |
| 3      | 6        | 2<br>7 8 | 1 2<br>8 9        | 4               | 1 2<br>8 9 | 1<br>7 8   | 5<br>7   | 2<br>1 2<br>7 8 |
| 4      | 2<br>9   | 4<br>8   | 1 2<br>6 8        | 7               | 5          | 1<br>6 8   | 2<br>6   | 3               |
| 5      | 1 3<br>7 | 2        | 1 2 3<br>6 9      | 1 2<br>6 9      | 3<br>6     | 8          | 2<br>6 9 |                 |
| 6      | 1 3<br>8 | 2<br>4   | 1 2 3<br>5 8 9    | 1 2 3<br>5 8 9  | 7          | 4 5        | 2 3<br>5 | 2<br>4 9        |
| 2<br>7 | 3<br>8   | 9        | 2 3<br>5 6<br>8   | 2 3<br>5 6<br>8 | 2<br>6 8   | 3<br>4 5 6 | 1        | 2<br>4 6<br>7   |

|          |              |            |                 |              |            |                 |          |            |
|----------|--------------|------------|-----------------|--------------|------------|-----------------|----------|------------|
| 1<br>8   | 1<br>4<br>8  | 5<br>3     | 2 3<br>4 5<br>8 | 7            | 2 3<br>5 8 | 9               | 6        | 1 3<br>4   |
| 7 8 9    | 6            | 2          | 3<br>4 8        | 3<br>4 9     | 1          | 3<br>4 7        | 5        | 4<br>7 3   |
| 1<br>7 9 | 1<br>4 7     | 5<br>3     | 4 5<br>6        | 5<br>9       | 2          | 8               | 4<br>7   | 1 3<br>4   |
| 5        | 1 2<br>7 8   | 1<br>4 7 8 | 1 2 3<br>4 6 8  | 1 2 3<br>4   | 2 3<br>6 8 | 3<br>4 7        | 2 3<br>4 | 9          |
| 6        | 3            | 1<br>4 7 8 | 1 2<br>4 7 8    | 1 2<br>4 5 9 | 2<br>8 9   | 4 5<br>7 8      | 4<br>7   | 4 5<br>7 8 |
| 2<br>7 8 | 2<br>7 8     | 9          | 2 3<br>4 7 8    | 2 3<br>4 5   | 2 3<br>8   | 3<br>4 5<br>7 8 | 1        | 6          |
| 1 2<br>8 | 5            | 1<br>8     | 1 2 3<br>6      | 1 2 3        | 7          | 6               | 4<br>8   | 3<br>4     |
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|                   |            |                 |            |                 |               |                 |            |          |
|-------------------|------------|-----------------|------------|-----------------|---------------|-----------------|------------|----------|
| 1 2 3<br>5 6<br>9 | 2 3<br>6 9 | 1 2 3<br>5      | 1<br>5 9   | 3<br>7          | 3<br>5 6<br>9 | 8               | 4          | 1 2<br>5 |
| 1 2<br>5 6<br>9   | 8          | 1 2<br>4 5<br>7 | 1<br>5 9   | 4 5 6<br>9      | 4 5 6<br>9    | 1 2<br>7 9      | 3          | 1 2<br>5 |
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|          |          |   |              |              |            |            |              |            |
|----------|----------|---|--------------|--------------|------------|------------|--------------|------------|
| 4 5      | 4 5      | 2 | 1 3<br>9     | 6            | 1<br>9     | 1 3<br>9   | 8            | 7          |
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|            |                 |              |            |                 |              |            |            |               |
|------------|-----------------|--------------|------------|-----------------|--------------|------------|------------|---------------|
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| 1 2<br>7   | 3               | 5            | 4<br>7 8 9 | 2<br>9          | 1 2<br>9     | 1<br>6 9   | 1 2<br>6 9 | 1 2<br>8 9    |
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|                 |          |               |             |             |             |             |            |                 |                 |          |                 |
|-----------------|----------|---------------|-------------|-------------|-------------|-------------|------------|-----------------|-----------------|----------|-----------------|
| 9               | 4 5<br>7 | 4<br>7        | 2           | 4<br>8      | 2<br>7      | 2<br>8      | 6<br>7     | 1               | 4 5 6<br>7      | 3        | 2<br>4 5<br>7 8 |
| 8               | 6        | 1 2<br>4<br>7 |             | 2 3<br>4    | 2 3<br>7    | 2 3<br>9    | 2 3<br>7   | 5               | 1<br>4 5<br>7   | 1        | 2<br>4 5<br>7   |
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| 2<br>4 5 6      | 1        | 9             | 7           | 2 3<br>8    | 2 3<br>6    | 2 3<br>8    | 6<br>8     | 3<br>4 5 6      |                 | 6        | 4 5<br>8        |

|   |   |   |   |   |   |   |     |   |   |          |          |            |     |
|---|---|---|---|---|---|---|-----|---|---|----------|----------|------------|-----|
| 1 |   | 1 |   | 2 | 1 | 3 |     | 8 | 1 | 3        | 2        | 2 3        | 2 3 |
| 7 | 9 |   | 9 | 4 | 6 | 5 | 6   | 7 | 4 | 5 6      | 4        | 6          | 5   |
|   | 6 | 4 | 6 |   |   | 5 | 3   |   | 9 | 4        | 6        | 1          | 7   |
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| 1 | 5 | 3 | 7 |   |   |   | 2 3 | 8 | 6 | 1        | 5        | 9          | 4   |
|   |   |   |   |   |   |   |     |   |   |          |          |            |     |
| 3 | 5 | 6 | 9 | 4 | 5 | 6 | 7   | 8 | 9 | 1        | 2 3<br>4 | 2 3        | 2 3 |
| 2 | 4 | 5 | 6 | 8 | 9 | 7 | 8   | 9 | 4 | 6        | 5        | 7          | 9   |
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| 3 | 4 | 5 | 6 | 8 | 9 | 7 | 8   | 9 | 1 | 2 3<br>4 | 2 3      | 2 3        | 2 3 |
| 8 | 4 | 8 | 1 | 9 | 4 | 7 | 8   | 9 | 1 | 2 3<br>4 | 2 3      | 2 3        | 2 3 |

|             |                 |                 |                 |                   |                   |               |                 |                 |               |   |
|-------------|-----------------|-----------------|-----------------|-------------------|-------------------|---------------|-----------------|-----------------|---------------|---|
| 1           | 2               | 4               | 3               | 4                 | 3                 | 7             | 9               | 5               | 6             | 8 |
| 8           | 4 5<br>7        | 3<br>4 5 6<br>7 | 3<br>4 5 6<br>7 | 3<br>4 5 6<br>7   | 1 3<br>4 5        | 2             | 3<br>7          | 9               | 1 3<br>4<br>7 |   |
| 9           | 4 5<br>7        | 3<br>4 5 6<br>7 | 3<br>4 5 6<br>7 | 1 3<br>4 5 6<br>8 | 1 3<br>4 5 6<br>8 | 2 3<br>7      | 1 3<br>7        | 1 2 3<br>4<br>7 |               |   |
| 2<br>4 5    | 6               | 1               | 2 3<br>4 5      | 2 3<br>4 5<br>8   | 7                 | 9             | 3<br>5<br>8     | 2 3<br>5        |               |   |
| 3           | 9               | 4 5<br>7 8      | 1               | 2<br>4 5<br>8     | 4 5<br>8          | 6<br>7 8      | 5<br>7 8        | 2 5 6<br>7      |               |   |
| 2<br>5<br>7 | 5<br>7          | 5<br>7 8        | 9               | 6                 | 3<br>5<br>8       | 4             | 1 3<br>5<br>7 8 | 1 2 3<br>5<br>7 |               |   |
| 4 5<br>7    | 1 3<br>4 5<br>7 | 2               | 3<br>4 5 6<br>7 | 9                 | 1 3<br>4 5 6      | 3<br>6<br>7 8 | 3<br>5<br>7 8   | 3<br>5 6<br>7   |               |   |
| 6           | 8               | 9               | 2 3<br>5<br>7   | 2 3<br>5          | 3<br>5            | 1             | 4               | 3<br>5<br>7     |               |   |
| 4 5<br>7    | 1 3<br>4 5<br>7 | 3<br>4 5<br>7   | 8               | 1 3<br>4 5        | 1 3<br>4 5 6      | 3<br>6<br>7   | 2               | 9               |               |   |

|        |        |        |        |        |        |        |        |        |        |        |        |             |        |                  |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|--------|------------------|--------|--------|--------|
| 1<br>7 | 5      | 8      | 1<br>7 | 6      | 5<br>7 | 3<br>7 | 4<br>7 | 5<br>7 | 6<br>7 | 4<br>7 | 5<br>7 | 6<br>7      | 2      | 1<br>4           | 5      | 9      |        |
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| 1<br>7 | 5<br>8 | 3<br>1 | 5<br>7 | 6<br>8 | 4      | 1<br>7 | 5<br>8 | 9      | 3<br>7 | 1<br>4 | 5<br>6 | 8<br>9      | 9      | 1<br>4           | 2<br>8 | 1<br>4 |        |
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|             |             |                  |                  |                  |                       |                       |             |                       |             |   |
|-------------|-------------|------------------|------------------|------------------|-----------------------|-----------------------|-------------|-----------------------|-------------|---|
| 1<br>4      | 2<br>6<br>7 | 3                | 1<br>4           | 2<br>6           | 8                     | 1<br>6                | 9           | 5                     | 4<br>7      | 2 |
| 8           | 1<br>4<br>7 | 2<br>5<br>6      | 1<br>4<br>7      | 2<br>5<br>6      | 9                     | 1<br>5<br>6           | 2<br>4<br>6 | 3<br>6<br>7           | 2<br>3<br>4 | 7 |
| 4           | 6<br>9      | 2<br>4<br>5<br>6 | 2<br>4<br>5<br>6 | 7                | 2<br>5<br>6           | 3                     | 2<br>4<br>6 | 8                     | 1           |   |
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|          |            |   |            |     |   |       |       |   |   |            |              |          |          |
|----------|------------|---|------------|-----|---|-------|-------|---|---|------------|--------------|----------|----------|
| 1        | 4          | 6 | 4 5 6<br>9 | 3   | 4 | 6     | 2     | 1 | 4 | 6          | 4            | 6        | 7        |
| 8        | 7          | 4 | 2          | 5   | 3 | 1     | 3     | 6 | 4 | 6          | 9            | 1 2<br>4 | 1 2<br>6 |
| 1 2<br>4 | 6          | 4 | 5 6<br>9   | 4   | 5 | 9     | 6     | 7 | 3 | 8          | 1 2<br>4 5 6 |          |          |
| 7        | 1          | 4 | 2          | 8   | 6 | 5     | 2     | 6 | 4 | 6          | 9            | 3        |          |
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| 2 3<br>4 | 2 3<br>4 5 | 6 | 7          | 1   | 2 | 8     | 4     | 5 | 4 | 2          | 2            |          |          |
| 4        | 6          | 4 | 6          | 8 9 | 7 | 4     | 6     | 9 | 5 | 1          | 3            | 8        | 9        |
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| 5        | 4          | 6 | 8 9        | 1   | 2 | 7 8 9 | 3     | 6 | 4 | 5          | 6            | 7 8 9    |          |



|             |                 |                 |                   |              |              |              |                   |            |
|-------------|-----------------|-----------------|-------------------|--------------|--------------|--------------|-------------------|------------|
| 1 2<br>6    | 1 2<br>5 6<br>7 | 1 2<br>5 6<br>7 | 4                 | 1 5 6<br>7 8 | 1 5<br>8     | 3<br>9       | 2 3<br>5 6<br>7 8 | 3<br>5 6   |
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| 8           | 2<br>5 6<br>7   | 2<br>5 6<br>9   | 5<br>7            | 5 6<br>7     | 5<br>9       | 3<br>4       | 2 3<br>5 6<br>7   | 1          |
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| 1 2 3<br>4  | 9               | 1 2<br>4 8      | 6                 | 1 2<br>5 7 8 | 1 5<br>8     | 1 2 3<br>5 7 | 1 3<br>4 5        | 3<br>4 5   |
| 1 2 3       | 7               | 1 2             | 1 5<br>9          | 1 2<br>5 9   | 4            | 6            | 1 3<br>5          | 8          |

|                 |              |            |            |              |            |              |               |            |
|-----------------|--------------|------------|------------|--------------|------------|--------------|---------------|------------|
| 1 2<br>6        | 2 3<br>7 8 9 | 1 2 3<br>8 | 1 5<br>8   | 1 5 6<br>9   | 1 6        | 4            | 2 3<br>5 9    | 2 3<br>5 6 |
| 2<br>6 4<br>8 9 | 2 3<br>8 9   | 5          | 4<br>8     | 7            | 4 6        | 3<br>8 9     | 1<br>2 3<br>6 |            |
| 1<br>6 4<br>8 9 | 4<br>8 9     | 1 4 6<br>8 | 3          | 1 4 5 6<br>9 | 2          | 5<br>8 9     | 5<br>9        | 7          |
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| 1 2<br>6 9      | 2 5<br>9     | 1 2<br>6   | 1 2 3<br>7 | 1 2 3<br>5   | 1 3<br>7   | 3<br>7 9     | 4             | 8          |
| 4               | 5<br>8 9     | 1<br>8     | 6          | 1 3<br>5 7 8 | 1 3<br>7 8 | 3 2 3<br>7 9 | 2 3<br>7 9    |            |
| 3               | 2<br>8       | 7          | 9          | 4 2<br>8     | 4 8        | 1            | 6             | 5          |

|            |              |            |                   |            |            |         |                 |   |
|------------|--------------|------------|-------------------|------------|------------|---------|-----------------|---|
| 4          | 5 6<br>8     | 2          | 7                 | 3 6<br>8 9 | 3 6<br>8 9 | 1 8 9   | 1 3<br>5 6<br>9 | 6 |
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| 2 3<br>5 8 | 2 3<br>5 8   | 5 3<br>8   | 3 5 6<br>8        | 1 5 6<br>8 | 4          | 7       | 9               |   |
| 1          | 9            | 4 3<br>8   | 4 3<br>4          | 3 7<br>8   | 6          | 2       | 5               |   |
| 5<br>7     | 4 5<br>7     | 6          | 2 4<br>9          | 5 9        | 3          | 8       | 1               |   |

|              |              |              |                |            |              |              |                |            |
|--------------|--------------|--------------|----------------|------------|--------------|--------------|----------------|------------|
| 2            | 4 3<br>8 9   | 4 3<br>9     | 4 3<br>7 9     | 8          | 4 5<br>5 6   | 6            | 1 5<br>7       | 3 5<br>2 3 |
| 1 6<br>8 9   | 7            | 1 3<br>8 9   | 3 1 3<br>6 5 6 | 1 3<br>5 6 | 4            | 2 3<br>5 8 9 | 2 3<br>5       |            |
| 1 6<br>8 9   | 5            | 1 3<br>4 6   | 4 3 6<br>7 9   | 2          | 1 3<br>4 6   | 3 7 8 9      | 3 7 8 9        | 7          |
| 4            | 6 8<br>8     | 5 6<br>8     | 1 3<br>5 6     | 9          | 2 5 6<br>7 8 | 2 5 6<br>7 8 | 2 5 6<br>7     |            |
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| 1 5 6<br>8   | 1 3<br>8     | 6 2<br>8     | 4 6 4 5 6<br>8 | 7          | 5 3<br>8     | 4 5 6<br>8   | 9              |            |
| 3            | 1 2<br>4 6   | 1 4 5 6<br>4 | 6 9<br>4       | 1 4 6<br>7 | 2 5 6<br>7   | 2 5 6<br>7   | 8              |            |
| 1 5 6<br>8 9 | 1 4 6<br>8   | 7            | 3 1 3<br>8     | 1 4 6<br>8 | 2            | 5 3<br>9     | 5 6 4 5 6<br>9 |            |
| 6 4<br>8 9   | 2 6 4<br>8 9 | 6 5 7<br>8 9 | 3 5 7<br>8     | 1 1<br>8   | 2 3<br>8     | 1 2 3<br>6 4 | 2 3<br>6       |            |

|              |            |              |              |              |            |                |              |          |
|--------------|------------|--------------|--------------|--------------|------------|----------------|--------------|----------|
| 1 2 3<br>4   | 6          | 1 2 3<br>8 9 | 7 8          | 1 2 3<br>5 6 | 2 3<br>4   | 1 3<br>7 9     | 1 4<br>7 9   | 5        |
| 1 2 3<br>9   | 1 3<br>5 9 | 7            | 1 2<br>6     | 1 2 3<br>5 6 | 4          | 1 3<br>6 9     | 8            | 3 6      |
| 1 3<br>4 8   | 1 3<br>4 5 | 1 3<br>5 8   | 7 8          | 9            | 5 6        | 2              | 1 4 6 4<br>7 | 3 6      |
| 1<br>7 9     | 2          | 1 6<br>9     | 5            | 1 4 6<br>7 8 | 6          | 3              | 4 6<br>8     |          |
| 1 3<br>7     | 8          | 1 3<br>5 6   | 1 2 6 4<br>9 | 1 2 6<br>4   | 2 6<br>9   | 5 6 4 5 6<br>7 |              |          |
| 7 9          | 5          | 4            | 3            | 2 6<br>7 8   | 5 6 8 9    | 2 5 6<br>9     | 1            |          |
| 5            | 1 3<br>7 9 | 1 2 3<br>9   | 2 6<br>9     | 8            | 2 3<br>6 9 | 4              | 1 6<br>7     | 2 3<br>6 |
| 2 3<br>4 8 9 | 3 9        | 2 3<br>8 9   | 2 6<br>9     | 7            | 1          | 3 5 6<br>8     | 2 3<br>6     |          |
| 6            | 1 3<br>4 7 | 1 2 3<br>8   | 2 4<br>5     | 2 3<br>5     | 2 3<br>7 8 | 1 3<br>7       | 1            | 9        |

|            |              |              |                |            |              |              |              |            |
|------------|--------------|--------------|----------------|------------|--------------|--------------|--------------|------------|
| 4 3<br>8 9 | 5            | 4 3<br>8     | 6              | 4 2<br>9 7 | 2 9          | 1            | 2 3<br>7 8 9 | 2 7 8 9    |
| 1 4<br>8 9 | 2            | 1 4<br>8     | 1 4<br>7 9     | 3          | 5            | 7 6<br>7 8 9 | 7 8 9        | 6 7 8 9    |
| 6          | 7            | 1 3<br>4 7   | 1 2<br>9       | 2          | 8            | 4 2 3<br>9   | 5            |            |
| 2          | 1 3<br>9 7   | 1 3<br>5 6   | 5 9            | 5 6<br>9   | 1 6<br>9     | 8            | 4            | 3 6<br>7 9 |
| 4 5<br>7 8 | 4 8 9        | 4 5 6<br>7 8 | 2 4 5 6<br>8 9 | 3          | 2 6<br>7 9   | 1            | 2 6<br>7 9   |            |
| 1 3<br>4 8 | 1 3<br>4 8 9 | 1 3<br>4 6   | 2 4 6<br>8 9   | 7          | 1 2<br>6 9   | 2 6<br>9     | 5            | 2 3<br>6 9 |
| 5 7 8      | 3 8 7 8      | 5 3 7 8      | 2 3<br>7 8 9   | 2 5<br>8 9 | 4            | 2 5<br>7 9   | 6            | 1          |
| 4 5<br>7 8 | 4 8          | 6 9          | 2 5<br>7 8     | 1          | 2 6<br>7     | 3            | 2 7 8        |            |
| 1 3<br>7 8 | 1 3<br>8     | 3 6 2        | 5 6<br>7 8 9   | 2          | 3 5 6<br>7 9 | 6 5 7 8 9    | 4            |            |

|        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|
| 1<br>4 | 2<br>4 | 3<br>4 | 6<br>9 | 5<br>8 | 7<br>9 | 5<br>7 |
| 4<br>6 | 7<br>9 | 5<br>9 | 8<br>9 | 2<br>6 | 1<br>9 |        |
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| 4<br>5 | 2<br>7 | 9<br>6 | 1<br>4 | 8<br>9 | 5<br>7 |        |
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| 4<br>8 | 3<br>9 | 6<br>9 | 1<br>4 | 7<br>9 | 5<br>9 | 2<br>6 |
| 2<br>7 | 5<br>9 | 4<br>9 | 6<br>9 | 3<br>7 | 1<br>9 | 8<br>9 |

|        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|
| 2<br>4 | 1<br>5 | 3<br>7 | 9<br>8 | 2<br>5 | 2<br>5 | 2<br>5 |
| 4<br>5 | 8<br>7 | 2<br>9 | 6<br>7 | 1<br>5 | 1<br>2 | 1<br>2 |
| 2<br>5 | 3<br>6 | 2<br>9 | 1<br>4 | 2<br>5 | 7<br>9 | 2<br>3 |
| 1<br>3 | 8<br>6 | 9<br>5 | 4<br>7 | 7<br>5 | 2<br>5 |        |
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| 4<br>6 | 5<br>8 | 4<br>9 | 6<br>9 | 2<br>6 | 3<br>9 | 7<br>9 |
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|        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|
| 4<br>9 | 3<br>5 | 6<br>7 | 1<br>4 | 2<br>7 | 4<br>5 | 8<br>9 |
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| 1<br>4 | 2<br>6 | 8<br>5 | 4<br>9 | 5<br>3 | 2<br>6 | 7<br>9 |
| 5<br>7 | 8<br>9 | 9<br>7 | 3<br>6 | 1<br>7 | 1<br>2 | 4<br>6 |
| 2<br>4 | 3<br>6 | 2<br>7 | 1<br>4 | 5<br>9 | 8<br>6 | 3<br>5 |
| 2<br>3 | 2<br>6 | 1<br>7 | 4<br>9 | 5<br>4 | 2<br>6 | 8<br>9 |
| 8<br>5 | 2<br>6 | 1<br>7 | 2<br>4 | 3<br>9 | 1<br>2 | 6<br>4 |
| 7<br>9 | 4<br>6 | 8<br>7 | 1<br>2 | 2<br>6 | 1<br>2 | 3<br>5 |

|        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 6<br>8 | 2<br>9 | 3<br>7 | 2<br>8 | 4<br>5 | 5<br>9 | 1<br>4 | 7<br>5 | 3<br>6 |
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| 4<br>1 | 3<br>9 | 1<br>8 | 3<br>7 | 6<br>5 | 3<br>9 | 1<br>5 | 3<br>9 | 2<br>5 |
| 3<br>7 | 5<br>8 | 4<br>9 | 5<br>7 | 5<br>8 | 2<br>6 | 1<br>9 | 6<br>7 |        |
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|        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 5<br>7 | 5<br>9 | 2<br>5 | 1<br>7 | 1<br>4 | 8<br>6 | 3<br>7 | 1<br>2 | 1<br>2 |
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| 6<br>9 | 1<br>9 | 3<br>4 | 1<br>6 | 2<br>3 | 8<br>6 | 3<br>4 | 5<br>9 | 7<br>8 |
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| 8<br>7 | 2<br>9 | 5<br>7 | 9<br>7 | 5<br>4 | 4<br>9 | 1<br>8 | 6<br>9 | 3<br>8 |
| 5<br>7 | 1<br>8 | 9<br>7 | 3<br>6 | 5<br>7 | 5<br>7 | 2<br>8 | 4<br>9 | 1<br>2 |
| 4<br>7 | 1<br>5 | 3<br>6 | 8<br>7 | 5<br>9 | 2<br>7 | 1<br>9 | 3<br>5 | 6<br>9 |
| 2<br>7 | 5<br>8 | 3<br>6 | 4<br>7 | 5<br>9 | 1<br>7 | 5<br>8 | 3<br>9 | 6<br>8 |

|        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 4<br>2 | 5<br>8 | 1<br>9 | 2<br>7 | 3<br>5 | 1<br>7 | 3<br>5 | 1<br>5 | 1<br>2 |
| 2<br>5 | 7<br>6 | 3<br>9 | 1<br>4 | 8<br>5 | 1<br>9 | 5<br>6 | 1<br>2 | 2<br>4 |
| 1<br>5 | 6<br>8 | 5<br>7 | 1<br>8 | 2<br>7 | 4<br>5 | 3<br>7 | 1<br>5 | 9<br>6 |
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| 2<br>7 | 6<br>9 | 3<br>7 | 5<br>9 | 2<br>7 | 2<br>9 | 6<br>9 | 4<br>8 | 1<br>9 |
| 8<br>7 | 2<br>6 | 1<br>7 | 2<br>6 | 1<br>3 | 2<br>5 | 4<br>9 | 5<br>6 | 7<br>9 |
| 2<br>5 | 1<br>6 | 4<br>7 | 2<br>8 | 3<br>7 | 2<br>9 | 2<br>6 | 3<br>5 | 2<br>6 |
| 2<br>3 | 6<br>4 | 2<br>8 | 2<br>7 | 5<br>6 | 2<br>9 | 2<br>6 | 1<br>3 | 1<br>2 |
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|                              |                             |                             |                              |                              |                              |                             |                             |                             |                             |
|------------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1                            | <sup>2</sup> <sub>7</sub> 5 | 3                           | 4                            | <sup>2</sup> <sub>7</sub> 56 | <sup>2</sup> <sub>7</sub> 56 |                             | <sup>6</sup> <sub>7</sub> 8 | <sup>6</sup> <sub>7</sub> 8 | 9                           |
| 4                            | <sup>2</sup> <sub>7</sub> 5 | 6                           | <sup>2</sup> <sub>7</sub> 58 | 9                            | <sup>2</sup> <sub>7</sub> 58 |                             | <sup>1</sup> <sub>7</sub> 3 | <sup>1</sup> <sub>7</sub> 3 | <sup>2</sup> <sub>7</sub> 8 |
| <sup>2</sup> <sub>7</sub> 9  | 8                           | <sup>2</sup> <sub>9</sub> 7 | <sup>2</sup> <sub>9</sub> 7  | <sup>1</sup> <sub>6</sub> 3  | <sup>1</sup> <sub>6</sub> 3  | 5                           | 4                           | <sup>2</sup> <sub>7</sub> 6 |                             |
| <sup>2</sup> <sub>7</sub> 8  | <sup>2</sup> <sub>7</sub> 5 | 5                           | <sup>2</sup> <sub>7</sub> 8  | 4                            | 9                            | <sup>1</sup> <sub>7</sub> 6 | <sup>1</sup> <sub>7</sub> 6 |                             | 3                           |
| 6                            | <sup>1</sup> <sub>9</sub> 4 | <sup>1</sup> <sub>9</sub> 4 | <sup>5</sup> <sub>7</sub> 8  | <sup>5</sup> <sub>7</sub> 8  | <sup>3</sup> <sub>7</sub> 8  | <sup>3</sup> <sub>7</sub> 8 | 4                           | <sup>9</sup> <sub>7</sub> 8 | 2                           |
| <sup>2</sup> <sub>7</sub> 89 | <sup>3</sup> <sub>9</sub> 4 | <sup>2</sup> <sub>9</sub> 7 | 1                            | <sup>2</sup> <sub>7</sub> 8  | <sup>2</sup> <sub>7</sub> 8  | <sup>6</sup> <sub>4</sub> 9 | 5                           | <sup>7</sup> <sub>8</sub> 6 |                             |
| <sup>3</sup> <sub>5</sub> 1  | <sup>3</sup> <sub>6</sub> 8 | 9                           | <sup>1</sup> <sub>7</sub> 56 | <sup>1</sup> <sub>7</sub> 56 | <sup>2</sup> <sub>7</sub> 8  | 2                           | <sup>3</sup> <sub>7</sub> 6 | <sup>4</sup> <sub>9</sub> 7 |                             |
| <sup>2</sup> <sub>5</sub> 9  | <sup>6</sup> <sub>9</sub> 7 | 3                           | <sup>2</sup> <sub>5</sub> 4  | <sup>2</sup> <sub>5</sub> 4  | <sup>6</sup> <sub>8</sub> 9  | <sup>6</sup> <sub>8</sub> 9 | <sup>6</sup> <sub>1</sub> 7 | <sup>6</sup> <sub>1</sub> 7 |                             |
| <sup>2</sup> <sub>3</sub> 9  | 4                           | <sup>1</sup> <sub>9</sub> 2 | <sup>2</sup> <sub>7</sub> 8  | <sup>1</sup> <sub>7</sub> 8  | <sup>1</sup> <sub>7</sub> 8  | <sup>3</sup> <sub>7</sub> 6 | <sup>3</sup> <sub>7</sub> 6 | <sup>3</sup> <sub>5</sub> 9 |                             |

|                             |                              |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1                           | <sup>4</sup> <sub>7</sub> 56 | <sup>4</sup> <sub>8</sub> 9 | 2                           | <sup>6</sup> <sub>9</sub> 3 | 7                           | <sup>4</sup> <sub>9</sub> 6 | <sup>4</sup> <sub>8</sub> 9 |                             |                             |
| <sup>2</sup> <sub>4</sub> 7 | <sup>2</sup> <sub>4</sub> 6  | <sup>4</sup> <sub>7</sub> 9 | <sup>1</sup> <sub>7</sub> 6 | 8                           | <sup>1</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>9</sub> 6 | <sup>3</sup> <sub>6</sub> 9 | 5                           |                             |
| <sup>7</sup> <sub>8</sub> 9 | <sup>3</sup> <sub>7</sub> 6  | <sup>7</sup> <sub>8</sub> 9 | 5                           | <sup>7</sup> <sub>6</sub> 9 | 4                           | 1                           | 2                           | <sup>3</sup> <sub>8</sub> 6 |                             |
| <sup>2</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>4</sub> 2  | <sup>4</sup> <sub>5</sub> 8 | <sup>3</sup> <sub>4</sub> 6 | <sup>2</sup> <sub>4</sub> 6 | <sup>5</sup> <sub>9</sub> 9 | <sup>2</sup> <sub>4</sub> 5 | 7                           | <sup>1</sup> <sub>2</sub> 3 | <sup>4</sup> <sub>6</sub> 9 |
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| <sup>2</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>7</sub> 2  | <sup>6</sup> <sub>4</sub> 9 | <sup>3</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>7</sub> 9 | 8                           | <sup>2</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>2</sub> 3 | <sup>49</sup>               |
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| <sup>4</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>7</sub> 9  | 1                           | <sup>4</sup> <sub>7</sub> 9 | 3                           | <sup>2</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>5</sub> 6 | 8                           | <sup>4</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>6</sub> 9 |
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|                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>4</sup> <sub>6</sub> 9 | <sup>4</sup> <sub>6</sub> 3 | 5                           | <sup>3</sup> <sub>8</sub> 6 | 2                           | <sup>1</sup> <sub>8</sub> 3 | 7                           | <sup>1</sup> <sub>8</sub> 3 |                             |                             |
| <sup>2</sup> <sub>7</sub> 6 | 1                           | 8                           | <sup>3</sup> <sub>9</sub> 7 | <sup>3</sup> <sub>9</sub> 7 | <sup>2</sup> <sub>9</sub> 5 | 5                           | <sup>3</sup> <sub>9</sub> 7 |                             |                             |
| <sup>2</sup> <sub>7</sub> 5 | <sup>2</sup> <sub>7</sub> 5 | <sup>3</sup> <sub>7</sub> 8 | 1                           | <sup>2</sup> <sub>7</sub> 8 | <sup>2</sup> <sub>8</sub> 9 | 4                           | 6                           |                             |                             |
| <sup>2</sup> <sub>6</sub> 9 | <sup>2</sup> <sub>6</sub> 1 | <sup>2</sup> <sub>8</sub> 7 | <sup>3</sup> <sub>8</sub> 9 | 5                           | <sup>2</sup> <sub>8</sub> 9 | 4                           |                             |                             |                             |
| 8                           | <sup>4</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>5</sub> 9 | <sup>6</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>7</sub> 9 | <sup>1</sup> <sub>7</sub> 9 | <sup>1</sup> <sub>9</sub> 7 | <sup>1</sup> <sub>9</sub> 7 | <sup>1</sup> <sub>9</sub> 7 | <sup>1</sup> <sub>9</sub> 7 |
| <sup>4</sup> <sub>5</sub> 6 | 3                           | <sup>4</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>8</sub> 2 | <sup>2</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>8</sub> 2 | <sup>1</sup> <sub>8</sub> 2 | <sup>1</sup> <sub>8</sub> 2 | <sup>1</sup> <sub>8</sub> 2 | <sup>1</sup> <sub>8</sub> 2 |
| 1                           | <sup>4</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>9</sub> 7 | <sup>2</sup> <sub>7</sub> 8 | <sup>4</sup> <sub>8</sub> 9 | 6                           | <sup>7</sup> <sub>8</sub> 9 | <sup>89</sup>               | <sup>59</sup>               | 5                           |
| <sup>3</sup> <sub>9</sub> 7 | <sup>6</sup> <sub>7</sub> 8 | 2                           | <sup>1</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>7</sub> 8 | 4                           | <sup>1</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>7</sub> 8 |
| <sup>4</sup> <sub>7</sub> 6 | 5                           | <sup>4</sup> <sub>7</sub> 6 | 9                           | <sup>4</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>7</sub> 8 | 3                           | 2                           |                             |

|                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>4</sub> 9 | 6                           | <sup>1</sup> <sub>4</sub> 2 | <sup>3</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>5</sub> 2 | <sup>1</sup> <sub>5</sub> 2 | <sup>1</sup> <sub>5</sub> 2 | <sup>1</sup> <sub>5</sub> 2 | <sup>1</sup> <sub>5</sub> 2 | <sup>1</sup> <sub>5</sub> 2 |
| 8                           | 7                           | <sup>1</sup> <sub>4</sub> 2 | 3                           | <sup>1</sup> <sub>6</sub> 2 | <sup>1</sup> <sub>6</sub> 2 | 5                           | 9                           | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 6 |
| <sup>1</sup> <sub>9</sub> 3 | <sup>1</sup> <sub>9</sub> 3 | 5                           | 4                           | <sup>1</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>7</sub> 8 | 2                           | <sup>3</sup> <sub>6</sub> 8 | <sup>1</sup> <sub>6</sub> 3 | <sup>1</sup> <sub>6</sub> 3 |
| <sup>1</sup> <sub>3</sub> 8 | 9                           | <sup>1</sup> <sub>7</sub> 5 | 5                           | 6                           | 4                           | 2                           | <sup>1</sup> <sub>7</sub> 3 | <sup>1</sup> <sub>7</sub> 3 | <sup>1</sup> <sub>7</sub> 3 |
| <sup>1</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>4</sub> 5 | 9                           | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 |
| 2                           | <sup>1</sup> <sub>4</sub> 5 | 7                           | 8                           | <sup>1</sup> <sub>4</sub> 3 | <sup>1</sup> <sub>4</sub> 3 | 9                           | <sup>3</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 3 | <sup>1</sup> <sub>5</sub> 6 |
| 7                           | <sup>1</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>6</sub> 3 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>8</sub> 9 | 4                           | <sup>6</sup> <sub>8</sub> 5 | <sup>3</sup> <sub>5</sub> 2 | <sup>3</sup> <sub>5</sub> 2 | <sup>3</sup> <sub>5</sub> 2 |
| <sup>4</sup> <sub>5</sub> 6 | <sup>2</sup> <sub>4</sub> 5 | 8                           | <sup>2</sup> <sub>5</sub> 6 | <sup>2</sup> <sub>5</sub> 6 | <sup>2</sup> <sub>5</sub> 6 | 7                           | 1                           | <sup>5</sup> <sub>5</sub> 3 | <sup>5</sup> <sub>5</sub> 3 |
| <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 |

|                             |                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 5                           | 9                           | <sup>7</sup> <sub>6</sub> 9 | <sup>3</sup> <sub>7</sub> 2 | 1                           | <sup>3</sup> <sub>7</sub> 8 | 4                           | <sup>3</sup> <sub>7</sub> 8 |                             |                             |
| 8                           | <sup>2</sup> <sub>7</sub> 6 | 9                           | <sup>4</sup> <sub>7</sub> 5 | <sup>4</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> 5 |
| 3                           | 4                           | <sup>1</sup> <sub>7</sub> 2 | <sup>5</sup> <sub>7</sub> 6 | 8                           | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> 5 |
| <sup>4</sup> <sub>6</sub> 9 | 3                           | 5                           | <sup>1</sup> <sub>4</sub> 8 | <sup>4</sup> <sub>6</sub> 9 | <sup>89</sup>               | 7                           | 2                           |                             |                             |
| <sup>6</sup> <sub>9</sub> 7 | <sup>2</sup> <sub>7</sub> 8 | 8                           | <sup>3</sup> <sub>7</sub> 5 | <sup>3</sup> <sub>7</sub> 5 | <sup>2</sup> <sub>5</sub> 6 | 4                           | <sup>1</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>5</sub> 9 |
| <sup>4</sup> <sub>9</sub> 7 | 1                           | <sup>2</sup> <sub>7</sub> 8 | <sup>4</sup> <sub>5</sub> 6 | <sup>4</sup> <sub>5</sub> 6 | <sup>2</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>8</sub> 9 | <sup>6</sup> <sub>8</sub> 9 | <sup>6</sup> <sub>8</sub> 9 |
| 1                           | <sup>6</sup> <sub>8</sub> 9 | 9                           | <sup>2</sup> <sub>4</sub> 5 | 3                           | <sup>5</sup> <sub>7</sub> 8 | <sup>5</sup> <sub>8</sub> 9 | <sup>4</sup> <sub>7</sub> 8 | <sup>5</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>8</sub> 9 |
| 7                           | <sup>6</sup> <sub>8</sub> 9 | 4                           | <sup>5</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>8</sub> 9 | <sup>2</sup> <sub>5</sub> 6 | 2                           | 3                           | <sup>1</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>5</sub> 8 |
| 2                           | 5                           | 3                           | <sup>4</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>8</sub> 9 | 7                           | <sup>1</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>8</sub> 9 |

|                             |                             |                             |                             |                             |                             |                             |                             |   |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---|-----------------------------|
| <sup>2</sup> <sub>9</sub> 7 | 5                           | <sup>8</sup> <sub>9</sub> 6 | 6                           | 1                           | <sup>3</sup> <sub>8</sub> 9 | 4                           |                             |   |                             |
| <sup>6</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>8</sub> 6 | <sup>1</sup> <sub>6</sub> 9 | 4                           | 7                           | 3                           | 5                           | 9                           | 2 |                             |
| 4                           | <sup>2</sup> <sub>9</sub> 7 | <sup>2</sup> <sub>9</sub> 7 | <sup>5</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>8</sub> 9 | 1                           | <sup>3</sup> <sub>8</sub> 9 | 6                           | 7 |                             |
| 5                           | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 | <sup>3</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 3 | 8                           | <sup>3</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>4</sub> 3 | 6 |                             |
| <sup>2</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>6</sub> 9 | <sup>1</sup> <sub>6</sub> 9 | <sup>3</sup> <sub>6</sub> 4 | <sup>3</sup> <sub>6</sub> 4 | 9                           | <sup>3</sup> <sub>7</sub> 8 | <sup>2</sup> <sub>4</sub> 3 | 5 |                             |
| <sup>6</sup> <sub>7</sub> 8 | <sup>6</sup> <sub>8</sub> 9 | 3                           | 2                           | <sup>4</sup> <sub>6</sub> 9 | 5                           | <sup>4</sup> <sub>7</sub> 8 | <sup>4</sup> <sub>8</sub> 9 | 1 |                             |
| <sup>2</sup> <sub>6</sub> 9 | <sup>2</sup> <sub>6</sub> 9 | <sup>2</sup> <sub>6</sub> 9 | <sup>6</sup> <sub>8</sub> 9 | <sup>6</sup> <sub>8</sub> 9 | 9                           | 7                           | 4                           | 1 | <sup>3</sup> <sub>8</sub> 9 |
| <sup>3</sup> <sub>7</sub> 9 | <sup>3</sup> <sub>6</sub> 9 | <sup>3</sup> <sub>6</sub> 9 | <sup>6</sup> <sub>7</sub> 9 | <sup>6</sup> <sub>7</sub> 9 | 1                           | <sup>6</sup> <sub>8</sub> 9 | 4                           | 2 | <sup>3</sup> <sub>8</sub> 9 |
| 1                           | 4                           | 8                           | <sup>5</sup> <sub>3</sub> 9 | <sup>5</sup> <sub>3</sub> 9 | 2                           | 6                           | 7                           | 9 |                             |

|                 |          |               |             |             |               |            |          |             |        |
|-----------------|----------|---------------|-------------|-------------|---------------|------------|----------|-------------|--------|
| 5<br>9          | 6        | 7             | 2           | 3<br>8      | 5<br>9        | 1<br>4     | 3<br>8   | 1<br>4      | 3<br>8 |
| 1<br>4 5<br>9   | 2        | 4 5           | 4 5<br>9    | 3<br>8      | 1<br>4 5<br>9 | 3<br>6     | 3<br>6   | 6<br>7 8    | 6      |
| 1<br>4          | 1<br>4   | 3<br>4        | 3<br>6      | 7           | 1<br>4        | 6          | 9        | 2           | 5      |
| 1 2<br>4 6      | 1<br>4   | 3<br>4        | 2 3<br>6    | 7           | 5             | 2<br>6     | 8        | 1<br>3<br>6 | 9      |
| 1 2<br>5 6      | 1<br>5   | 3<br>5 6<br>9 | 2<br>6<br>9 | 4           | 8             | 1 2 3<br>6 | 7        | 1<br>6      | 6      |
| 7               | 8        | 2<br>6<br>9   | 3           | 1           | 2<br>6<br>9   | 4<br>6     | 5        | 4<br>6      | 6      |
| 2<br>6<br>8     | 9        | 2<br>6<br>8   | 1           | 2<br>6      | 7             | 5          | 4        | 3           |        |
| 3               | 4 5<br>7 | 4 5 6         | 8           | 6<br>9      | 4 5           | 1<br>7     | 6<br>9   | 2           |        |
| 2<br>4 5 6<br>7 | 4 5      | 1             | 4 5         | 2<br>6<br>9 | 3             | 7          | 6<br>8 9 | 7 8         | 6      |

|              |              |               |            |          |          |                   |               |                   |                   |
|--------------|--------------|---------------|------------|----------|----------|-------------------|---------------|-------------------|-------------------|
| 2 3<br>7 8 9 | 6            | 2 3<br>7 9    | 1 2<br>5   | 2<br>5   | 4        | 1 2 3<br>7 8      | 1<br>7 8 9    | 1 2 3<br>8 9      |                   |
| 1            | 4<br>7 8     | 2<br>4 7      | 6          | 9        | 3        | 2<br>5<br>7 8     | 5<br>7 8      | 2<br>5<br>8       |                   |
| 5            | 3<br>7 9     | 2 3<br>7 9    | 1 2        | 8        | 1 2<br>7 | 4                 | 6             | 1 2 3<br>9        |                   |
| 4            | 5<br>7 9     | 3<br>5        | 2 3<br>8 9 | 1        | 2<br>7 9 | 5 6<br>7 8        | 5<br>7 8 9    | 5 6<br>8 9        |                   |
| 2<br>7 9     | 1<br>7       | 5<br>9        | 8          | 4<br>9 7 | 6        | 1<br>5<br>7       | 3             | 1<br>4 5<br>9     |                   |
| 3<br>7 9     | 1<br>7       | 3<br>9        | 6          | 4<br>8 9 | 3<br>7   | 5                 | 2             | 1<br>4<br>8 9     |                   |
| 3<br>8       | 3<br>8       | 1<br>5        | 3<br>5     | 7        | 4        | 1 2<br>9          | 9             | 1<br>5<br>8       | 1 2 3<br>5 6<br>8 |
| 3<br>7 8 9   | 4 5<br>7 8 9 | 4 5<br>7 9    | 1 2 3<br>5 | 2 3<br>5 | 1 2<br>9 | 1 2 3<br>5 6<br>8 | 1<br>4 5<br>8 | 1 2 3<br>5 6<br>8 |                   |
| 3<br>9       | 2            | 1<br>4 5<br>9 | 3<br>5     | 1<br>9   | 3<br>9   | 6                 | 8             | 1<br>5<br>4 5     | 7                 |

|               |        |            |          |            |          |          |            |               |          |
|---------------|--------|------------|----------|------------|----------|----------|------------|---------------|----------|
| 9             | 5      | 1 2 3<br>7 | 4        | 1 2<br>7   | 6<br>7   | 1 2<br>6 | 1 2 3<br>7 | 2<br>6        | 8        |
| 1 2<br>7      | 1<br>7 | 3          | 6        | 2<br>7     | 1 2      | 8        | 1 2 3<br>4 | 1<br>4 5<br>7 | 3        |
| 8             | 4      | 1 2<br>7   | 2<br>7   | 1 2<br>5 6 | 6<br>9   | 3        | 1 2<br>7   | 2<br>5 6      | 1<br>5   |
| 1 2<br>4      | 8      | 1 2<br>4   | 2<br>7   | 1 2<br>6   | 1 2<br>7 | 6        | 5          | 3             | 9        |
| 1 2<br>4      | 1<br>7 | 5          | 2 3<br>7 | 1 2 3<br>9 | 1 2<br>7 | 9        | 8          | 2<br>7        | 6        |
| 3             | 6      | 9          | 8        | 5          | 2<br>7   | 1 2<br>4 | 2<br>7     | 1<br>4        |          |
| 7<br>5        | 2      | 3<br>7     | 6<br>9   | 8          | 4        | 6<br>9   | 1          | 5<br>7        | 3        |
| 6             | 3<br>7 | 4<br>9     | 1        | 2 3<br>7   | 2<br>9   | 5<br>9   | 4<br>7     | 3<br>8        | 4 5<br>7 |
| 1<br>4 5<br>7 | 1<br>7 | 3<br>9     | 8        | 3<br>7     | 3<br>6   | 5 6<br>7 | 4<br>6     | 4 5 6<br>7    | 2        |

|     |        |               |          |              |               |            |          |          |            |
|-----|--------|---------------|----------|--------------|---------------|------------|----------|----------|------------|
| 5 6 | 2      | 1<br>4 5<br>8 | 4 5 6    | 7            | 1<br>5 6<br>8 | 9          | 3        | 1<br>4   | 6          |
| 9   | 1<br>4 | 3<br>6        | 4 5      | 2 3<br>4 5 6 | 1 2 3<br>5 6  | 1<br>5 6   | 2<br>4 6 | 1 2<br>4 | 8          |
| 7   | 1<br>4 | 3<br>6        | 1<br>8   | 2 3<br>4     | 1 2 3<br>6    | 9          | 4        | 2<br>5   | 1 2<br>4 6 |
| 8   | 1<br>7 | 6<br>7        | 1 2<br>5 | 2 3<br>5 6   | 2 3<br>5 6    | 4          | 5<br>7   | 3<br>9   | 2<br>7 9   |
| 3   | 4<br>7 | 2<br>7        | 4 5<br>9 | 1            | 2<br>5 8      | 5<br>7 8   | 6        | 4<br>7   | 2<br>9     |
| 5 6 | 4<br>7 | 6<br>7        | 4 5<br>7 | 2 3<br>5 6   | 9             | 5 6<br>7 8 | 1        | 2<br>4 7 | 2 3<br>4 7 |
| 4   | 9      | 3             | 8        | 1<br>7       | 6<br>7        | 1<br>6     | 2<br>7   | 1 2<br>7 | 5          |
| 2   | 7 8    | 7 8           | 5 6<br>9 | 1<br>5 6     | 3             | 4<br>6     | 1<br>4   | 6<br>9   |            |
| 1   | 5      | 6             | 7 9      | 4            | 2             | 3<br>8     | 7 8 9    | 7 9      |            |

|                 |          |          |            |               |            |          |            |                 |   |
|-----------------|----------|----------|------------|---------------|------------|----------|------------|-----------------|---|
| 2<br>4 5<br>8   | 2<br>4   | 9        | 3<br>7 8   | 3<br>4 5<br>7 | 6          | 2<br>4   | 1<br>7     | 2<br>4 5<br>7   |   |
| 2<br>4 5 6<br>8 | 7        | 2<br>8   | 5<br>8 9   | 4 5<br>9      | 1          | 3        | 2<br>8 9   | 2<br>4 5 6<br>9 |   |
| 1               | 3        | 6<br>8   | 5<br>7 8 9 | 4 5<br>7 9    | 2          | 4<br>7   | 9<br>7 8 9 | 4 5 6<br>7 9    |   |
| 2 3<br>4        | 5        | 2 3<br>4 | 1 2 3<br>7 | 6             | 4<br>7     | 8        | 2 3<br>7   | 1 2<br>7 9      |   |
| 2 3<br>4        | 2<br>6   | 1        | 2 3<br>5   | 3<br>9        | 4 5<br>7 8 | 4<br>7   | 2 3<br>9   | 2<br>4 9        |   |
| 2 3<br>4        | 2<br>8   | 7        | 1 2 3<br>9 | 1<br>9        | 3<br>8     | 6        | 5          | 1 2<br>4        | 9 |
| 9               | 1<br>8   | 5        | 4          | 2             | 3          | 1<br>7   | 6          | 7 8             |   |
| 2 3<br>7 8      | 1 2<br>6 | 2 3<br>8 | 1<br>7     | 1<br>6        | 9          | 5        | 4          | 2<br>8          |   |
| 2<br>7          | 1 2<br>6 | 4        | 1<br>5 6   | 8             | 7 5        | 1 2<br>9 | 2<br>9     | 3               |   |

|            |                 |          |                 |              |            |            |              |                 |               |
|------------|-----------------|----------|-----------------|--------------|------------|------------|--------------|-----------------|---------------|
| 3<br>5     | 4 5<br>9        | 7        | 1<br>5 6<br>8   | 1<br>5 6     | 1<br>5 6   | 3<br>6     | 4<br>8 9     | 3<br>6          | 2             |
| 3<br>8     | 2               | 1        | 4               | 9            | 8<br>6     | 5          | 7 8          | 3<br>7 8        |               |
| 6          | 4 5<br>9        | 4<br>8 9 | 3<br>7 8        | 2<br>5       | 2 3<br>5   | 2<br>8     | 3<br>9       | 1<br>4 8 9      |               |
| 1<br>5     | 1<br>4 5 6<br>9 | 4<br>6   | 3               | 8            | 1<br>4 5 6 | 1<br>7     | 6<br>9       | 2               | 1<br>5<br>7 9 |
| 1 2<br>5   | 1<br>5 6<br>9   | 2<br>8 9 | 1 2<br>5 6      | 1 2<br>5 6   | 1 2<br>5 6 | 4          | 5 6<br>9     | 3<br>1 3<br>5 9 |               |
| 7          | 3               | 4<br>6   | 1 2<br>5 6      | 1 2<br>4 5 6 | 9          | 8          | 5 6          | 1<br>5          |               |
| 4          | 8               | 2 3<br>6 | 1 2<br>5 6<br>9 | 1 2<br>5 6   | 7          | 1 2 3<br>9 | 5<br>9       | 1<br>5<br>9     |               |
| 9          | 1<br>7          | 6        | 2<br>8          | 1 2<br>5 6   | 3          | 1 2<br>7   | 4 5<br>7 8   | 1<br>4 5<br>7 8 |               |
| 1 2 3<br>7 | 1               | 5        | 1 2<br>8 9      | 1 2<br>4     | 1 2<br>4   | 1 2<br>8   | 3<br>4 7 8 9 | 6               |               |

|     |     |       |     |       |       |   |       |   |       |
|-----|-----|-------|-----|-------|-------|---|-------|---|-------|
| 1 2 | 6   | 3     | 9   | 4 2 6 | 4 2 6 | 7 | 1 2 3 | 5 | 1 2 3 |
| 1 2 | 6   | 7     | 4   | 2 6   | 3     | 5 | 8     | 1 | 1 2   |
| 2   | 6   | 3     | 5   | 4 2 6 | 9     | 1 | 7     | 3 | 2 3   |
| 4   | 9   | 1 2 5 | 1 2 | 6     | 7     | 2 | 1 2 3 | 1 | 3     |
| 3   | 1 2 | 1 2   | 5   | 4 8   | 4     | 8 | 1 2   | 1 | 1 2   |
| 8   | 1 2 | 5     | 6   | 9     | 1 2   | 3 | 1 2   | 5 | 4     |
| 1 2 | 6   | 7     | 3   | 1 2   | 4     | 5 | 2     | 1 | 4 5   |
| 5   | 4   | 1 2   | 7   | 1 2   | 6     | 2 | 1     | 3 | 1     |
| 9   | 1   | 1     | 3   | 1     | 4     | 5 | 6     | 2 | 1     |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 8 | 6 | 2 | 3 | 5 | 6 | 1 | 5 | 6 |
| 3 | 5 | 1 | 6 | 8 | 9 | 7 | 8 | 9 | 4 |
| 4 | 1 | 6 | 9 | 2 | 7 | 6 | 5 | 8 | 7 |
| 6 | 4 | 3 | 4 | 3 | 1 | 4 | 5 | 9 | 8 |
| 2 | 4 | 2 | 3 | 4 | 3 | 7 | 4 | 5 | 6 |
| 1 | 4 | 2 | 5 | 4 | 9 | 4 | 3 | 4 | 7 |
| 5 | 1 | 2 | 1 | 4 | 6 | 4 | 6 | 9 | 3 |
| 2 | 1 | 2 | 3 | 1 | 3 | 6 | 5 | 6 | 7 |
| 8 | 1 | 3 | 7 | 1 | 3 | 4 | 5 | 3 | 2 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 2 | 2 | 4 | 6 | 5 | 4 | 6 | 1 | 2 |
| 1 | 2 | 5 | 7 | 8 | 9 | 8 | 9 | 3 | 4 |
| 2 | 4 | 6 | 1 | 2 | 5 | 3 | 2 | 5 | 3 |
| 4 | 1 | 2 | 3 | 2 | 3 | 2 | 6 | 5 | 2 |
| 2 | 2 | 5 | 6 | 3 | 4 | 9 | 8 | 7 | 1 |
| 2 | 2 | 2 | 5 | 1 | 2 | 3 | 6 | 2 | 3 |
| 6 | 2 | 3 | 1 | 4 | 3 | 7 | 4 | 5 | 2 |
| 2 | 2 | 4 | 6 | 5 | 2 | 6 | 3 | 1 | 5 |
| 5 | 5 | 3 | 8 | 2 | 1 | 3 | 1 | 4 | 5 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 8 | 4 | 3 | 2 | 3 | 2 | 5 | 7 | 2 |
| 3 | 6 | 6 | 4 | 2 | 3 | 1 | 4 | 2 | 3 |
| 5 | 6 | 2 | 4 | 5 | 6 | 8 | 7 | 1 | 6 |
| 6 | 3 | 7 | 9 | 8 | 4 | 1 | 2 | 6 | 5 |
| 5 | 6 | 1 | 5 | 6 | 8 | 1 | 2 | 6 | 4 |
| 4 | 1 | 5 | 6 | 2 | 1 | 5 | 6 | 5 | 9 |
| 2 | 3 | 5 | 5 | 7 | 9 | 7 | 9 | 6 | 4 |
| 2 | 3 | 6 | 4 | 1 | 2 | 3 | 7 | 2 | 3 |
| 8 | 5 | 6 | 3 | 1 | 2 | 3 | 2 | 1 | 2 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 2 | 1 | 2 | 2 | 6 | 1 | 3 | 5 |
| 3 | 2 | 3 | 1 | 2 | 8 | 1 | 2 | 1 | 3 |
| 5 | 1 | 2 | 4 | 5 | 3 | 4 | 2 | 6 | 7 |
| 2 | 8 | 3 | 6 | 4 | 6 | 5 | 1 | 4 | 6 |
| 1 | 6 | 4 | 6 | 2 | 6 | 4 | 6 | 3 | 5 |
| 5 | 5 | 6 | 4 | 5 | 6 | 1 | 7 | 4 | 6 |
| 4 | 3 | 1 | 6 | 5 | 6 | 2 | 1 | 3 | 1 |
| 1 | 3 | 2 | 3 | 1 | 2 | 7 | 1 | 2 | 3 |
| 6 | 2 | 1 | 2 | 3 | 6 | 4 | 1 | 5 | 9 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 6 | 3 | 1 | 2 | 5 | 1 | 2 | 4 |
| 7 | 2 | 1 | 2 | 1 | 2 | 3 | 6 | 1 | 2 |
| 1 | 5 | 1 | 2 | 8 | 2 | 3 | 1 | 2 | 6 |
| 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 1 | 2 |
| 4 | 3 | 1 | 4 | 9 | 2 | 5 | 6 | 7 | 8 |
| 2 | 3 | 6 | 8 | 9 | 4 | 1 | 5 | 6 | 7 |
| 1 | 3 | 4 | 1 | 2 | 2 | 3 | 8 | 1 | 3 |
| 1 | 3 | 2 | 3 | 5 | 2 | 3 | 4 | 1 | 3 |
| 3 | 3 | 6 | 1 | 5 | 9 | 2 | 4 | 3 | 8 |

|     |     |     |       |       |     |       |     |
|-----|-----|-----|-------|-------|-----|-------|-----|
| 1   | 2   | 3   | 2     | 1 2   | 1   | 4 5 6 | 2   |
| 7 9 | 4 5 |     | 4     | 4 5 8 | 5 8 | 8 9   | 6   |
| 8   | 6   | 2   | 7     | 2 3   | 9   | 4 5   | 1   |
| 1   | 2   | 1 2 | 6     | 1 2 3 | 1   | 3     | 2 3 |
| 7 9 | 4 5 | 4 5 |       | 4 5 8 | 5 8 | 4 5   | 8 9 |
| 4   | 2   | 1   | 3     | 2     | 5   | 8     | 9   |
|     | 1   | 6   | 3     | 4     |     | 7     |     |
| 3   | 5   | 5   | 1     | 1     | 1   | 6     | 2   |
| 7   | 7   | 7   | 8 9   | 8 9   | 8   |       | 4   |
| 4   | 2   | 9   | 8     | 2     | 1   | 5     | 3   |
|     |     |     | 4     | 5     | 7   | 5 6   | 6   |
| 5   | 3   | 1   | 1     | 1     | 2   | 1     | 6   |
|     | 4   | 7   | 8 9   | 7 8 9 | 4   | 9     | 7 8 |
| 1   | 6   | 2   | 5     | 1     | 6   | 4     | 3   |
| 7   | 7 8 | 7   | 7 8 9 | 7 8 9 |     | 9     | 7 8 |
| 1   | 6   | 4   | 1     | 1     | 6   | 3     | 2   |
| 7   | 7 8 | 7 8 | 8     | 7 8   | 6   | 4     | 5   |

|     |       |       |       |     |       |     |       |
|-----|-------|-------|-------|-----|-------|-----|-------|
| 5   | 3     | 2     | 7     | 1   | 3     | 1   | 3     |
|     | 8     |       |       | 9   | 8 9   | 8   |       |
| 9   | 4     | 3     | 1 2 3 | 5   | 1     | 3   | 1 2 3 |
|     | 8     | 4     | 8     | 8   | 8     | 6   | 8     |
| 4   | 1     | 4     | 2 3   | 6   | 3     | 5   | 2 3   |
| 7   | 7 8   | 4     | 8 9   | 9   | 8     | 8 9 |       |
| 1   | 6     | 4     | 1 2 3 | 5   | 1 2 3 | 1   | 3     |
| 7   | 7 8 9 | 7 8 9 | 9     | 9   | 9     | 4   | 6     |
| 1   | 6     | 6     | 1     | 4   | 8     | 8   | 8     |
|     | 8 9   | 8     | 6     | 9   | 8     | 8   | 6     |
| 1 2 | 2     | 3     | 6     | 8   | 7     | 9   | 1     |
| 4   | 4     |       | 3     | 3   | 4     | 5   | 2     |
|     |       |       | 3     | 6   | 8     | 7   | 9     |
| 3   | 2     | 1     | 5     | 1   | 1     | 7   | 1 2   |
| 4   | 6     | 4     | 6     | 9   | 8 9   | 8   | 8 9   |
| 1 2 | 2     | 1     | 1     | 3   | 3     | 4   | 1 2 3 |
| 7   | 6     | 6     | 6     | 8 9 | 9     | 8 9 | 8 9   |
| 8   | 5     | 9     | 1     | 3   | 7     | 2   | 1     |
|     |       |       | 3     | 7   | 2     | 4   | 3     |

|     |     |     |     |     |       |     |     |
|-----|-----|-----|-----|-----|-------|-----|-----|
| 1   | 3   | 2   | 4   | 4   | 9     | 5 6 | 1   |
| 4   | 4 5 |     | 7 8 | 4   | 8     | 7   | 3   |
| 4   | 6   | 4 5 | 2   | 3   | 1     | 9   | 2   |
| 1   | 7   | 3   | 6   | 5   | 2     | 4   | 1   |
| 9   |     | 9   |     | 8   |       | 8   | 3   |
| 2   | 1   | 4   | 3   | 4   | 6     | 2   | 2   |
| 7   | 7 9 | 7 9 | 8 9 | 8 9 | 7 8   | 8   | 6   |
| 5   | 2 3 | 3   | 1   | 1   | 6     | 1 2 | 7   |
| 4   | 4   | 4   | 4   | 4   | 8 9   | 8   | 6   |
|     | 9   | 9   | 8   | 8   | 8     | 8   |     |
| 4   | 3   | 3   | 1   | 2   | 4 5 6 | 1   | 3   |
| 7   | 4   | 6   | 4 5 | 7   | 7     | 5 6 | 9   |
| 2 3 | 2 3 | 1   | 9   | 4   | 6     | 2   | 2   |
| 4   | 4 5 |     |     | 8   | 4 5 6 | 6   | 6   |
| 2 3 | 2 3 | 3   | 7   | 2 3 | 1 2   | 9   | 5   |
| 4   | 6   | 4   | 4   | 4   | 6     | 6   |     |
| 2   | 2   | 5 6 | 1 2 | 1   | 2     | 3   | 1 2 |
| 7   | 9   | 7 9 | 8   | 8   | 6     | 6   | 4   |

|     |       |       |       |     |       |     |     |
|-----|-------|-------|-------|-----|-------|-----|-----|
| 6   | 2     | 2     | 5     | 2   | 3     | 4   | 1   |
| 9   | 6     | 6     |       | 9   |       | 8   | 4   |
| 1   | 3     | 3     |       | 1   | 4     | 5   | 6   |
| 8 9 | 4     | 4     | 7 8 9 | 8 9 | 7 8 9 | 8   | 2   |
| 1   | 2     | 2     | 2     | 4   | 6     | 9   | 7   |
| 8   | 4 5 6 | 4 5 6 | 8     | 8   | 8     | 3   | 3   |
| 5   | 1     | 2 3   | 4     | 2 3 | 2     | 6   | 6   |
|     |       | 6     | 9     | 9   | 7 8   | 8   | 7   |
| 3   | 2 3   | 2 3   | 5     | 6   | 1     | 9   | 4   |
| 6   | 4     | 6     | 7 8   | 7 8 | 4     | 7   | 6   |
| 7   | 8     | 2 3   | 1     | 2   | 4     | 6   | 4   |
|     |       | 9     | 9     | 9   | 6     | 4 5 | 5 6 |
| 2   | 5     | 1     | 6     | 4   | 4     | 4   | 8   |
| 7   | 9     |       | 9     | 9   | 7     | 5   |     |
| 4   | 6     | 6     | 1     | 7   | 5     | 3   | 2   |
|     | 9     | 8     | 8 9   | 8 9 | 3     | 2   | 6   |
| 3   | 3     | 3     | 1     | 3   | 3     | 1   | 1   |
| 8 9 | 5 6   | 5 6   | 8 9   | 4   | 8 9   | 4   | 5 6 |

|     |     |       |     |       |       |       |       |
|-----|-----|-------|-----|-------|-------|-------|-------|
| 1   | 1   | 3     | 5   | 1     | 3     | 9     | 4     |
| 7 8 | 7   | 6     |     | 7 8   |       | 7     | 6     |
| 1   | 5   | 1 2 3 | 6   | 1 2 3 | 1     | 2     | 1     |
| 7 9 |     | 9     | 4   | 4     | 7     | 7     | 7     |
| 1   | 1   | 6     | 9   | 1 2   | 3     | 2     | 1     |
| 7 8 | 7   |       | 7 8 | 7 8   | 7     | 5 6   | 5 6   |
| 3   | 6   | 5 6   | 7   | 2     | 1     | 2     | 4     |
|     | 8   | 8     | 4   | 4 5 6 | 5 6   | 5 6   | 5 6   |
| 4   | 1   | 1     |     | 3     | 2 3   | 3     | 3     |
|     | 6   | 5 6   | 8   | 6     | 5 6   | 5 6   | 5 6   |
|     | 8   | 8     |     | 7 8   | 7     | 7 8 9 | 7 8 9 |
| 2   | 9   | 7     | 1   | 3     | 1     | 3     | 3     |
|     |     |       | 4   | 4     | 4 5 6 | 4 5 6 | 4 5 6 |
| 6   | 1   | 3     | 9   | 5     | 1     | 3     | 2     |
|     | 4   | 8     | 7 8 | 7     | 4     | 7 8   | 7     |
| 5   | 3   | 3     | 2   | 3     | 4     | 6     | 1     |
|     | 7 8 | 8 9   | 4   | 6     | 7     | 7 8   | 7 8 9 |
| 1   | 2   | 1     | 3   | 8     | 1     | 3     | 3     |
| 7   | 9   | 9     | 7   | 7     | 4     | 5 6   | 5 6   |

|   |     |     |       |     |       |       |       |
|---|-----|-----|-------|-----|-------|-------|-------|
| 1 | 3   | 1   | 5     | 2   | 1     | 2     | 1     |
| 4 | 4   | 9   | 7 8 9 | 4   | 7 8 9 | 6     | 3     |
| 3 | 3   | 7   | 2     | 6   | 1     | 4     | 2 3   |
| 6 | 5 6 | 9   | 9     | 8 9 | 8 9   | 8 9   | 5     |
| 2 | 1   | 5 6 | 5 6   | 4   | 3     | 5     | 1     |
|   | 4   | 9   | 8 9   | 7   | 8     | 7 8 9 | 7 9   |
| 3 | 3   | 3   | 1     | 5   | 5     | 2     | 2 3   |
| 4 | 4   | 6   | 6     | 8   | 8     | 6     | 4     |
| 7 | 7   | 9   | 9     | 9   | 9     | 9     | 9     |
| 8 | 4   | 6   | 1     | 2   | 9     | 5 6   | 7     |
|   |     |     | 3     | 6   | 4     | 6     | 4 5 6 |
| 5 | 2   | 3   | 5     | 6   | 1     | 8     |       |
|   |     | 4   | 7     | 7   | 6     | 9     |       |
| 1 | 1   | 5 6 | 4     | 8   | 7     | 3     | 2     |
|   | 6   | 5 6 | 9     | 5 6 | 9     | 9     | 6     |
| 9 | 8   | 2 3 | 2 3   | 4   | 2 3   | 5     | 1     |
|   |     | 6   | 6     | 5 6 | 5 6   | 7     | 7     |
| 1 | 3   | 1   | 2 3   | 2 3 | 1     | 6     | 4     |
| 7 | 6   | 5 6 | 5 6   | 6   | 5 6   | 8 9   | 6     |

|                 |               |                 |              |          |            |                |            |              |
|-----------------|---------------|-----------------|--------------|----------|------------|----------------|------------|--------------|
| 2<br>4 5<br>9   | 3<br>4 5<br>9 | 3<br>4 5<br>9   | 2<br>8       | 2<br>5 8 | 1          | 7              | 4<br>6 9   | 4<br>8 6     |
| 1 2<br>4 5<br>9 | 4 5<br>9      | 1<br>4 5        | 6            | 2<br>5 8 | 7          | 4<br>8 9       | 4<br>9     | 3            |
| 8               | 6             | 7               | 4            | 3        | 9          | 5              | 2          | 1            |
| 1<br>4 5 6      | 2             | 1<br>4 5 6<br>8 | 1<br>8 9     | 1<br>8 9 | 4<br>8     | 1<br>4 8       | 1<br>4 5 7 | 3<br>4 5 7 8 |
| 3               | 4 5<br>8      | 9               | 1 2<br>8     | 7        | 2<br>4 8   | 1 2<br>4 8     | 1<br>4 5 6 | 2<br>4 5 6   |
| 1<br>4          | 7             | 1<br>4<br>8     | 5            | 6        | 2 3<br>4 8 | 1 2 3<br>4 8 9 | 1<br>4     | 3<br>9       |
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| 4 5 6<br>9      | 4 5<br>9      | 4 5 6<br>9      | 1 2 3<br>7 9 | 1 2<br>9 | 2 3<br>5   | 1 2 3<br>4     | 8          | 4 5<br>7     |
| 7               | 4 5<br>8      | 2               | 1<br>8       | 3<br>8   | 1          | 1<br>4         | 3<br>4 5   | 9            |

|                 |                   |          |            |                 |               |                 |                 |                 |                 |
|-----------------|-------------------|----------|------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|
| 1<br>4          | 1<br>4 5<br>7 8 9 | 1<br>4 6 | 3<br>6     | 2<br>7          | 4<br>8 9      | 3<br>4          | 3<br>4 5<br>8 9 | 2 3<br>5 6<br>8 | 2<br>4 5<br>8 9 |
| 2               | 4 5<br>8 9        | 4<br>6   | 1          | 4<br>8 9        | 4<br>8 9      | 3<br>4 5<br>8 9 | 3<br>5 6<br>8   | 7               |                 |
| 4<br>7 8 9      | 3                 | 4<br>7   | 5          | 2<br>7          | 4<br>8 9      | 1               | 2<br>6 4<br>8 9 |                 |                 |
| 1<br>4 6 4      | 5                 | 7        | 1<br>4 8 9 | 1<br>4 8 9      | 3<br>4 8 9    | 2               | 1<br>8          | 3<br>8 9        | 1               |
| 1<br>4 6<br>7 8 | 2                 | 9        | 3<br>6     | 1<br>4 5 6<br>8 | 1<br>4 5<br>8 | 3<br>7 8        | 3<br>5<br>7 8   | 1<br>5<br>8     |                 |
| 1<br>7 8        | 1<br>7 8          | 3        | 8 9        | 1<br>5 8 9      | 2             | 5<br>7 9        | 4               | 6               |                 |
| 5               | 1<br>4 7          | 1<br>4 7 | 2          | 8               | 6             | 4<br>8          | 9               | 3               |                 |
| 1<br>4          | 1<br>4            | 2        | 4<br>8     | 3               | 7             | 6               | 1<br>5<br>8     | 1<br>4 5<br>8   |                 |
| 3               | 6                 | 8        | 4<br>9     | 1<br>5<br>9     | 1<br>5<br>9   | 4<br>7          | 1 2<br>7        | 1 2<br>4        |                 |

|                 |            |            |              |                 |                 |                 |                 |             |          |
|-----------------|------------|------------|--------------|-----------------|-----------------|-----------------|-----------------|-------------|----------|
| 8               | 4<br>7 9   | 3<br>6 9   | 5            | 2<br>6 4<br>9 7 | 3<br>4 7<br>9   | 2 3<br>4 7<br>9 | 4<br>6 4<br>6   | 3<br>6      | 1        |
| 4<br>9          | 1          | 2 3<br>9   | 5 6 4<br>8 9 | 3<br>8 9        | 3<br>4 5<br>8 9 | 7               | 4 5 6<br>8      | 2<br>9      |          |
| 4<br>7 9        | 4<br>7 9   | 3<br>6 7 9 | 2 3<br>7 9   | 5 6 4<br>8 9    | 1<br>7 8 9      | 1               | 4 5 6<br>8      | 4 5 6<br>8  | 2<br>9   |
| 2               | 5<br>7     | 1<br>7     | 3<br>7       | 4               | 6<br>7 8        | 9               | 1<br>5<br>7 8   | 3<br>5<br>8 |          |
| 1<br>4 5<br>7 9 | 8          | 1<br>7 9   | 1 2<br>9     | 1<br>9 7        | 3<br>9 7 9      | 2 3<br>7 9      | 1<br>4 5 6<br>7 | 1<br>4 5 6  | 3<br>5 6 |
| 1<br>4<br>7 9   | 3<br>4 7 9 | 6          | 1<br>8 9     | 5               | 3<br>7 8 9      | 2               | 1<br>4 7 8      | 3<br>8      |          |
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| 6               | 5<br>7     | 1<br>7 8   | 1<br>8 9     | 5<br>8 9        | 4<br>8 9        | 4 5<br>8 9      | 1<br>5<br>8     | 2<br>7 8    | 3<br>5   |
| 1<br>5<br>7     | 2          | 4          | 3            | 1<br>8          | 5<br>8          | 1<br>5 6<br>8   | 9               | 5 6<br>7 8  |          |

|                   |                 |                 |              |          |            |          |                 |                   |   |
|-------------------|-----------------|-----------------|--------------|----------|------------|----------|-----------------|-------------------|---|
| 6                 | 5               | 3<br>7          | 4            | 8        | 9          | 3<br>7   | 1               | 2                 |   |
| 1 2 3<br>9        | 1<br>7 8        | 3<br>7 8        | 1 2 3<br>7 8 | 5        | 1<br>7     | 1 2 6    | 3<br>7 8 9      | 3<br>4 6 4<br>8 9 | 3 |
| 1 2<br>9          | 4               | 1 2<br>7 8      | 1 2<br>7     | 1<br>6   | 3          | 5        | 6<br>7 8        | 8 9               |   |
| 4 5               | 9               | 6               | 1<br>7       | 3<br>4 7 | 1<br>4     | 8        | 2               | 5<br>3 1 5        | 3 |
| 1<br>3 1 3<br>7 9 | 1<br>3 1 3<br>8 | 1<br>3 1 3<br>8 | 6            | 2        | 5          | 4        | 9               | 7                 |   |
| 7                 | 2               | 4 5             | 1<br>3       | 9        | 1<br>4     | 1<br>8   | 3<br>5<br>8     | 6                 |   |
| 1<br>4 5          | 3<br>1 3        | 1<br>4 5        | 1<br>4 5     | 1<br>8 9 | 1<br>4 5 6 | 7        | 1<br>6<br>8 9   | 2<br>4 5<br>8 9   | 3 |
| 1 2 3<br>4 5      | 6               | 9               | 1 2<br>8     | 1<br>4 5 | 1 2<br>4   | 1<br>7 8 | 3<br>4 5<br>7 8 | 1<br>4 5<br>8     | 3 |
| 8                 | 1<br>7          | 1 2<br>4 5<br>7 | 1 2<br>9     | 3        | 1 2<br>4 6 | 1<br>9   | 6 4 5<br>9      | 1<br>4 5<br>9     |   |

|          |                 |            |               |          |                 |        |          |          |  |
|----------|-----------------|------------|---------------|----------|-----------------|--------|----------|----------|--|
| 5        | 3               | 2<br>6     | 2<br>6        | 1<br>7   | 4               | 9      | 1<br>7   | 8        |  |
| 1<br>4 7 | 4<br>7 9        | 7 9        | 8             | 1<br>7   | 3<br>1 3        | 5      | 6        | 2        |  |
| 1<br>7   | 2<br>8          | 2<br>8     | 2<br>5 6      | 9        | 5 6             | 4      | 1<br>7   | 3<br>1 3 |  |
| 6        | 2<br>4 5<br>7 8 | 2<br>5 7 8 | 3<br>4 5      | 1<br>4 8 | 3<br>5 8        | 1<br>7 | 2 3<br>5 | 9        |  |
| 4        | 3<br>2<br>5 9   | 1          | 5<br>9        | 4        | 3<br>7          | 8      | 2<br>5   | 6        |  |
| 3<br>7   | 5<br>7 8 9      | 5<br>7 8 9 | 3<br>5 6<br>9 | 2        | 1<br>5 6<br>8 9 | 3<br>1 | 4        | 5<br>3   |  |
| 9        | 6               | 4          | 1             | 5        | 2               | 3      | 8        | 7        |  |
| 2        | 1               | 3          | 7             | 4<br>8   | 8 9             | 6      | 5<br>9   | 4 5      |  |
| 8        | 5<br>7          | 5<br>7     | 4<br>9        | 3<br>6   | 3<br>9          | 2      | 1<br>9   | 1<br>4   |  |

|            |            |            |              |              |              |              |                   |          |   |
|------------|------------|------------|--------------|--------------|--------------|--------------|-------------------|----------|---|
| 1<br>4 5   | 2          | 4 5<br>7   | 3<br>6       | 4<br>7 8     | 1<br>7 8     | 4 5<br>8 9   | 5<br>9            | 3<br>1 3 | 3 |
| 8          | 1<br>4 5   | 3<br>6     | 2<br>4       | 9            | 1 2<br>4 5   | 7            | 1 2 3             |          |   |
| 9          | 1<br>4     | 4<br>7     | 3            | 5            | 1 2<br>7 8   | 2<br>4 8     | 2<br>6            | 1 2<br>8 | 6 |
| 1 2<br>4 5 | 1<br>4 5   | 3<br>4 5 8 | 2<br>4 5 7 8 | 6            | 2 3<br>5 7 8 | 1<br>7       | 2 3<br>4          | 9        |   |
| 2<br>4 5   | 7          | 4 5<br>9   | 3<br>4 5 9   | 1            | 2 3<br>5 9   | 6            | 8                 | 2 3      |   |
| 1 2<br>4 6 | 1<br>4 6   | 3<br>6 4 9 | 3<br>8 9     | 2<br>4 7 8 9 | 3<br>7 8     | 2 3<br>7 8 9 | 1<br>4            | 2 3<br>5 |   |
| 3          | 5 6<br>9   | 1          | 5<br>7 8 9   | 7 8          | 4            | 2<br>5 8 9   | 2<br>5 6<br>9 7 8 | 2<br>6   |   |
| 4 5 6      | 4 5 6<br>9 | 2          | 1<br>7 8     | 3<br>7 8 9   | 5<br>7 8 9   | 5<br>8 9     | 5 6<br>9 7 8      | 6        |   |
| 7          | 8          | 5<br>9     | 5<br>9       | 2            | 6            | 3            | 1                 | 4        |   |

|              |            |            |            |              |            |            |              |            |
|--------------|------------|------------|------------|--------------|------------|------------|--------------|------------|
| 1<br>4       | 1 2<br>4 9 | 7          | 2<br>9     | 4<br>9       | 3          | 5          | 6            | 8          |
| 5<br>9       | 6          | 2<br>5 9   | 2<br>5 9   | 1            | 8          | 7          | 4            | 2 3        |
| 4 5<br>8     | 2 3<br>4 8 | 2<br>5 8   | 2<br>5 6 7 | 4<br>7       | 6<br>4 5 6 | 1 2<br>9   | 1 2 3<br>9   | 1 2 3      |
| 1<br>7       | 5<br>9     | 6          | 4          | 3<br>9       | 1 2<br>9   | 8          | 1 2<br>5 7   | 1 2<br>5   |
| 1<br>5       | 3<br>8     | 1 2 3<br>8 | 1 2<br>5 8 | 2 3<br>6     | 3<br>6     | 7          | 4            | 1 2<br>5 9 |
| 1<br>7       | 1 2<br>9   | 4          | 8          | 5            | 1 2<br>9   | 3          | 1 2<br>7     | 6          |
| 4<br>7 8 9   | 6<br>7 8 9 | 4<br>7 8 9 | 8<br>9     | 1            | 2          | 4 5 6<br>9 | 6<br>9 7 8 9 | 5<br>3 5 7 |
| 2            | 1<br>7 8 9 | 1<br>8 9   | 3<br>7 9   | 5 6<br>7 8 9 | 6<br>7 8 9 | 5 6<br>9   | 1<br>9 7 8 9 | 4          |
| 1<br>4 7 8 9 | 6<br>5     | 3          | 6<br>7 9   | 4<br>7 8 9   | 6<br>4 9   | 4<br>6 9   | 1 2<br>6 9   | 1 2<br>7   |

|              |              |          |            |            |            |          |              |            |
|--------------|--------------|----------|------------|------------|------------|----------|--------------|------------|
| 4<br>7       | 5            | 6        | 8          | 1 2<br>4 7 | 3          | 1<br>4 7 | 1 2<br>4 7   | 1 2<br>4 9 |
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| 6            | 2 3<br>7 9   | 3        | 1          | 5          | 2          | 8 9      | 7 8 9        | 4          |
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|          |          |            |          |            |          |              |            |              |
|----------|----------|------------|----------|------------|----------|--------------|------------|--------------|
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| 4<br>7   | 6<br>8   | 1<br>7 9   | 3<br>2   | 1<br>4 6   | 3<br>4 6 | 4<br>6       | 1<br>7 9   | 5<br>4 6 9   |
| 2        | 5        | 1<br>3     | 8        | 4          | 6 4 6    | 1<br>3       | 9          | 7            |
| 1<br>3 9 | 6        | 1<br>8 9   | 3<br>1   | 5          | 2<br>9   | 7            | 1 2 3<br>8 | 2<br>4 5     |
| 4<br>7   | 1<br>4 9 | 1<br>7 8 9 | 1<br>5   | 2<br>9     | 3        | 1 2<br>8     | 1 2<br>6 8 | 2<br>5 6     |

|          |          |        |                |                |          |          |              |              |
|----------|----------|--------|----------------|----------------|----------|----------|--------------|--------------|
| 1<br>8 9 | 3<br>9   | 2      | 4<br>7         | 3<br>4 7 9     | 5        | 6        | 7 8 9        | 1<br>4 7 8   |
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| 5 6<br>7 | 8        | 4      | 1<br>7         | 5 6<br>7       | 6        | 9        | 1<br>7       | 3<br>2       |
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| 4<br>7 9 | 7 9      | 8      | 6<br>7 8       | 4<br>6 7 8     | 1        | 2        | 5            | 6<br>7 8 9 3 |

|              |              |            |          |          |          |            |                |              |
|--------------|--------------|------------|----------|----------|----------|------------|----------------|--------------|
| 2<br>7       | 1 2<br>5 9   | 1<br>5 9   | 3        | 6        | 8        | 1<br>4 7   | 1 2<br>4 9     | 1 2<br>4 9   |
| 2 3<br>7 8 9 | 4            | 7 8 9      | 1        | 2<br>5 7 | 2<br>5 9 | 3<br>7 8 9 | 2 3<br>8       | 6            |
| 2 3<br>7 8 9 | 1 2 3<br>7 9 | 6          | 4        | 2<br>7 9 | 2<br>9   | 5          | 1 2 3<br>8 7 9 | 1 2 3        |
| 4 5 6<br>7 9 | 5<br>7 9     | 4 5<br>7 9 | 6<br>8 9 | 5<br>8 9 | 1        | 2          | 3<br>4 5 6 7   | 3<br>4 5     |
| 2<br>7       | 5 6<br>9     | 8          | 1<br>7 9 | 5<br>9   | 2<br>6 9 | 4          | 3<br>5 6 7     | 1<br>3 5 6 7 |
| 2<br>4 5 6   | 1 2<br>5     | 3          | 2<br>8   | 6<br>8   | 5<br>7   | 7          | 1<br>4 8       | 9<br>1 4 5   |
| 1            | 6            | 5<br>9     | 7        | 2 3<br>9 | 4        | 3<br>9     | 2 3<br>5       | 8            |
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| 4 5<br>9     | 3<br>5 9     | 2          | 6<br>8 9 | 3<br>8 9 | 3<br>6 9 | 1<br>4 9   | 3<br>7         | 1<br>4 5 9   |

|            |            |            |              |            |            |              |            |            |
|------------|------------|------------|--------------|------------|------------|--------------|------------|------------|
| 1<br>6 9   | 3<br>4 6 9 | 3<br>4     | 8            | 5          | 4<br>9     | 1<br>4 6     | 2          | 7          |
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| 2          | 4 5 6<br>9 | 4 5<br>9   | 4<br>7       | 4<br>7 9   | 3          | 1<br>4 5 6   | 1<br>4 5 6 | 8          |
| 8          | 2<br>5 6   | 2<br>5 9   | 1 2 3<br>5   | 2 3<br>6 9 | 1<br>6 9   | 1 2 3<br>5 6 | 7          | 4          |
| 5 6<br>7 9 | 4 5 6<br>7 | 3          | 1 2<br>4 5 7 | 2<br>4 7 9 | 1<br>6 7 9 | 8            | 1<br>5 6   | 1 2<br>5 6 |
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| 1<br>3     | 9          | 6          | 1 2 3<br>4   | 2 3<br>4   | 5          | 7            | 8          | 1 2        |
| 1<br>7     | 3<br>7 8   | 2 3<br>7 8 | 9            | 2 3<br>6 7 | 1<br>7     | 1 2<br>4 5 6 | 1<br>4 5 6 | 1 2<br>5 6 |
| 4          | 2<br>7     | 1 2<br>5 7 | 1 2<br>7     | 2<br>6     | 8          | 3            | 9          | 1 2<br>5 6 |



|               |             |               |                 |            |                   |               |                 |               |
|---------------|-------------|---------------|-----------------|------------|-------------------|---------------|-----------------|---------------|
| 1 2<br>6<br>9 | 4           | 2<br>6<br>9   | 1 2 3<br>6<br>7 | 8          | 1 2 3<br>6<br>7   | 5             | 3<br>6          | 1 2 3         |
| 8             | 7           | 2<br>6        | 5               | 1 2 3<br>6 | 4                 | 2 3<br>6      | 9               | 1 2 3         |
| 1 2<br>5 6    | 3           | 2<br>5 6      | 1 2<br>6<br>7   | 9          | 1 2<br>6<br>7     | 4<br>8        | 6<br>7 8        | 1 2<br>6<br>8 |
| 2 3<br>7      | 6           | 4             | 2 3<br>7        | 5          | 2 3<br>7 8        | 1             | 9               |               |
| 2 3<br>5<br>9 | 8           | 2 3<br>5<br>9 | 1 2 3<br>9      |            | 1 2 3<br>9        | 7             | 4               | 6             |
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|                 |                     |                   |                      |               |                    |               |               |                      |                   |          |
|-----------------|---------------------|-------------------|----------------------|---------------|--------------------|---------------|---------------|----------------------|-------------------|----------|
| 1               | 4<br>7<br>9         | 2 3<br>4<br>9     | 2 3                  | 5<br>7        | 4 5<br>7           | 4 5<br>7 9    | 3             | 6                    | 8                 | 5<br>9   |
| 4               | 3<br>8 9            | 4<br>7 8 9        | 3<br>4<br>9          | 5<br>8        | 6                  | 4 5<br>7 8 9  | 2             | 1<br>4 5<br>7 9      | 1<br>5<br>9       | 3        |
| 4               | 3<br>8 9            | 6                 | 5                    | 2             | 4<br>7 8           | 1             | 4<br>7 9      | 3<br>4<br>9          |                   | 3        |
| 2 3<br>6        | 1                   | 2 3<br>6          | 4                    | 9             | 5 6                | 8             | 2<br>5 6      | 7                    |                   |          |
| 2 3<br>6<br>8 9 | 2 3<br>5<br>8 9     | 2 3<br>6<br>9     | 1<br>5 6<br>8        | 3<br>7 8      | 1 2<br>5<br>7 8    | 5 6<br>7 8    | 1<br>5<br>9   | 3<br>1 2<br>5 6<br>9 | 4                 |          |
| 4               | 2 3<br>6 4 5<br>8 9 | 2 3<br>4 5<br>8 9 | 7                    | 1<br>5 6<br>8 | 3<br>1 2<br>5<br>8 | 3<br>5 6<br>8 | 1<br>5<br>9   | 3<br>1 2<br>5 6<br>9 | 1 2 3<br>5 6<br>9 |          |
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| 4               | 2<br>6 4            | 2                 | 8                    | 9             | 3                  | 4 5 6         | 1<br>4 5<br>7 | 1 2<br>4 5 6<br>7    | 1 2<br>5 6        |          |
| 7               | 4<br>9              | 1<br>4<br>9       | 6<br>8               | 2             | 1<br>5 6<br>8      | 4<br>5<br>8   | 3             | 4 5<br>9             | 3                 | 5 6<br>9 |

|             |             |             |               |               |                 |                 |                 |          |
|-------------|-------------|-------------|---------------|---------------|-----------------|-----------------|-----------------|----------|
| 5<br>8      | 4           | 5<br>8      | 3<br>7 9      | 2             | 1<br>7 9        | 1<br>6<br>9     | 3<br>5 6<br>8   | 3        |
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| 4<br>7 8    | 2 3<br>7 8  | 1<br>8      | 3<br>7 8 9    | 1 2<br>7      | 1<br>6<br>7 8 9 | 2 3<br>4        | 2 3<br>5        |          |
| 4 5<br>7    | 3<br>7      | 6           | 2<br>7        | 5<br>7        | 4<br>7          | 3<br>7          | 2<br>5          | 8 9<br>1 |
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|          |             |               |                 |                 |              |          |               |                 |
|----------|-------------|---------------|-----------------|-----------------|--------------|----------|---------------|-----------------|
| 1<br>8 9 | 2           | 3             | 6<br>8 9        | 1<br>8 9        | 4            | 5 6<br>7 | 5<br>7        | 5 6<br>7        |
| 8 9      | 7           | 6             | 3<br>8 9        | 2               | 5            | 4<br>9   | 3<br>4        | 1               |
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| 4        | 2<br>4      | 1<br>4 5<br>8 | 2<br>4 5<br>8 9 | 3<br>6          | 6            | 3<br>8   | 7             | 4 5<br>9        |
| 4        | 4 5<br>7    | 3<br>8        | 9               | 1<br>4 5<br>7 8 | 3<br>7 8     | 4 5<br>6 | 2             | 3<br>5 6<br>8 9 |
| 4        | 6<br>7      | 4 5<br>8      | 4 5<br>7 8      | 3<br>8 9        | 4 5<br>7 8 9 | 2        | 1             | 4 5<br>9        |
| 3        | 4<br>7      | 6<br>7        | 1 2<br>4 5<br>6 | 1<br>4 5<br>7   | 6            | 8        | 2<br>5<br>7 9 | 5 6<br>7 9      |
| 5        | 8<br>7 8    | 6<br>7 8      | 1 2<br>7 8      | 2 3<br>8        | 1<br>7 8     | 3<br>9   | 3<br>6<br>7   | 2 3<br>4        |
| 4<br>7   | 2<br>6<br>9 | 2<br>4<br>7 8 | 2 3<br>4 5<br>6 | 3<br>4 5<br>7 8 | 3<br>6       | 1        | 5 6<br>7      | 3<br>5 6        |

|                 |            |               |             |               |                   |                 |                   |                 |
|-----------------|------------|---------------|-------------|---------------|-------------------|-----------------|-------------------|-----------------|
| 4<br>5<br>8     | 1          | 9             | 3<br>7      | 4<br>7 8      | 4<br>8            | 6               | 2 3<br>5<br>7     | 2<br>5          |
| 2<br>4 5 6      | 3<br>4 5 6 | 3<br>4 5      | 1<br>7      | 3<br>6        | 9                 | 1<br>4<br>6     | 1 2 3<br>5<br>7   | 2<br>5<br>7     |
| 6<br>8          | 7          | 3<br>8        | 2           | 5             | 1<br>8            | 6               | 1<br>3            | 4<br>9          |
| 3               | 4 5<br>8   | 7             | 1<br>5 6    | 1 2<br>4<br>8 | 1 2<br>4 5 6<br>8 | 9               | 1 2<br>5          | 2<br>4 5<br>8   |
| 9               | 4 5<br>8   | 6             | 1<br>5      | 1 2<br>4<br>8 | 1 2<br>4 5<br>8   | 2 3<br>4 5<br>7 | 1 2 3<br>5<br>7   | 2<br>4 5<br>7 8 |
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| 5 6<br>7 8      | 5 6<br>8   | 3<br>5 6<br>8 | 4           | 2<br>7        | 9                 | 2<br>7 8        | 2<br>5 6<br>7     | 1               |
| 1<br>4<br>7 8   | 9          | 1<br>4<br>8   | 1<br>5<br>7 | 6             | 1 2<br>5          | 4<br>7 8        | 2<br>7            | 3               |

|               |            |             |               |               |                   |             |                 |               |
|---------------|------------|-------------|---------------|---------------|-------------------|-------------|-----------------|---------------|
| 4<br>5 6<br>8 | 2<br>4 5 6 | 7           | 3<br>5 6<br>8 | 4 5<br>8      | 1                 | 5<br>8      | 3<br>6          | 9             |
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| 5 6<br>8 9    | 5 6<br>9   | 1<br>8      | 3<br>7 8      | 5<br>7 8 9    | 2                 | 4           | 3<br>6          | 1<br>5        |
| 1             | 2<br>7     | 6<br>4      | 2<br>7        | 2<br>7 9      | 5                 | 3           | 2<br>9          | 8             |
| 2 3<br>5 6    | 2<br>5 6   | 2 3<br>6    | 4             | 2<br>7 8 9    | 6<br>7 8 9        | 2<br>6<br>7 | 1<br>7          | 6             |
| 2<br>6        | 8          | 9           | 1             | 3             | 7<br>6            | 5<br>4      |                 |               |
| 4             | 2 3<br>8 9 | 1<br>8      | 2 3<br>7 8    | 2<br>5<br>7 8 | 6<br>4<br>7 8     | 3<br>7 9    | 2<br>5<br>9     | 4<br>5<br>7   |
| 4             | 2 3<br>8 9 | 2<br>6<br>9 | 2 3<br>8      | 2<br>5<br>7 8 | 1 2<br>4 5<br>7 8 | 3<br>7 8    | 1 2<br>5 6<br>9 | 2<br>1<br>5 6 |
| 7             | 4<br>6     | 5           | 9             | 1 2<br>4      | 3<br>4            | 1 2<br>6    | 8               | 1<br>3<br>6   |

|                         |                       |                       |                       |                       |                         |                       |                       |                       |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|-----------------------|
| 4 <sup>3</sup><br>7 8   | 6 <sup>3</sup><br>7 8 | 5                     | 4 <sup>2</sup><br>8   | 6 <sup>4</sup><br>7 8 | 2 <sup>2</sup><br>7 8   | 9                     | 1 <sup>2</sup><br>7   | 7 8                   |
| 4 <sup>7</sup><br>7 8 9 | 7 8                   | 1 <sup>4</sup><br>9   | 1 <sup>2</sup><br>4   | 2 <sup>4</sup><br>7 8 | 3                       | 6                     | 2 <sup>5</sup><br>7   | 5 <sup>7</sup><br>7 8 |
| 7 8                     | 6 <sup>2</sup><br>7 8 | 2 <sup>1</sup><br>6   | 1 <sup>5</sup><br>8   | 5 <sup>6</sup><br>7 8 | 5 <sup>5</sup><br>7 8   | 9                     | 4 <sup>5</sup><br>7 8 | 3                     |
| 4 <sup>3</sup><br>7 8   | 3 <sup>5</sup><br>7 8 | 2 <sup>4</sup><br>9   | 1 <sup>2</sup><br>4 5 | 2 <sup>3</sup><br>4 5 | 1 <sup>2</sup><br>4 5   | 3 <sup>3</sup><br>7   | 6                     | 9                     |
| 4 <sup>3</sup><br>6 9   | 6 <sup>5</sup><br>9   | 2 <sup>4</sup><br>6 9 | 7                     | 2 <sup>3</sup><br>4 5 | 2 <sup>2</sup><br>4 5 6 | 3 <sup>3</sup><br>4 5 | 8                     | 1                     |
| 4 <sup>3</sup><br>7 8   | 6 <sup>1</sup><br>7 8 | 1 <sup>4</sup><br>6   | 4 <sup>5</sup><br>8   | 3 <sup>6</sup><br>9   | 9                       | 2 <sup>5</sup><br>7   | 3 <sup>4</sup><br>5   | 5 <sup>7</sup>        |
| 5                       | 6                     | 7                     | 4 <sup>3</sup><br>8 9 | 1 <sup>4</sup><br>8   | 4 <sup>3</sup><br>9     | 2                     |                       |                       |
| 1 <sup>2</sup><br>4     | 9                     | 8                     | 2 <sup>3</sup><br>4 5 | 2 <sup>3</sup><br>4 5 | 3 <sup>2</sup><br>4 5   | 1 <sup>3</sup><br>7   | 3 <sup>5</sup><br>9   | 6                     |
| 1 <sup>2</sup><br>4     | 9                     | 3                     | 2 <sup>4</sup><br>5   | 6 <sup>2</sup><br>9   | 8                       | 1 <sup>5</sup><br>7   | 5 <sup>9</sup><br>7   | 4 <sup>5</sup><br>7   |

|            |              |        |            |               |            |              |               |                 |
|------------|--------------|--------|------------|---------------|------------|--------------|---------------|-----------------|
| 1 2<br>6 9 | 4 5 6<br>6 9 | 3      | 1 2<br>6 9 | 8             | 1 2<br>7 9 | 2<br>4 7 9   | 1 2<br>5 9    | 1 2<br>4 5 6    |
| 1 2<br>6 9 | 4 6<br>6 9   | 1 4 6  | 5          | 3             | 1 2<br>7 9 | 2<br>4 7 8 9 | 1 2<br>8 9    | 1 2<br>4 6<br>8 |
| 7          | 5 6<br>6 9   | 8      | 4          | 1 2<br>6 9    | 1 2<br>9   | 2<br>9       | 3             | 1 2<br>5 6      |
| 8          | 1 2          | 9      | 3          | 1 2<br>4 5    | 6          | 2<br>4       | 2<br>5        | 7               |
| 4          | 1 2          | 5      | 7          | 1 2<br>9      | 1 2<br>8 9 | 2<br>8 9     | 6             | 3               |
| 3          | 6<br>7       | 6<br>7 | 2<br>8 9   | 2<br>4 5<br>9 | 4 5        | 1            | 2<br>5<br>8 9 | 2<br>4 5<br>8   |
| 1<br>6 9   | 3            | 2      | 1<br>6 8 9 | 7             | 1<br>8 9   | 5            | 4             | 1<br>8          |
| 5          | 4<br>8 9     | 1<br>4 | 1 2<br>8 9 | 1 2<br>4<br>9 | 3          | 6            | 7             | 1 2<br>8        |
| 1<br>6 7 8 | 4<br>6 7     | 6<br>6 | 1 2<br>8   | 1 2<br>4 5 6  | 4 5        | 3            | 1 2<br>8      | 9               |

|                       |                     |                     |                     |                       |                       |                       |                       |                     |
|-----------------------|---------------------|---------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| 1 <sup>2</sup><br>5 9 | 5 <sup>9</sup>      | 2 <sup>9</sup>      | 4                   | 1 <sup>2</sup><br>9   | 8                     | 6                     | 7                     | 3                   |
| 8                     | 7                   | 4                   | 6                   | 3                     | 1 <sup>2</sup><br>9   | 1 <sup>2</sup><br>9   | 1 <sup>2</sup><br>9   | 5                   |
| 1 <sup>2</sup><br>9   | 6                   | 3                   | 5                   | 1 <sup>2</sup><br>7 9 | 1 <sup>2</sup><br>7 9 | 4 <sup>8</sup><br>9   | 4 <sup>8</sup><br>9   | 1 <sup>2</sup><br>9 |
| 2 <sup>5</sup><br>9   | 1                   | 6                   | 3                   | 4 <sup>5</sup><br>8 9 | 4 <sup>5</sup><br>9   | 4 <sup>2</sup><br>8 9 | 4 <sup>2</sup><br>8 9 | 7                   |
| 3                     | 4                   | 8                   | 2                   | 1 <sup>4</sup><br>7 9 | 1 <sup>4</sup><br>7 9 | 5                     | 1 <sup>4</sup><br>9   | 6                   |
| 2 <sup>5</sup><br>7 9 | 4 <sup>5</sup><br>9 | 2 <sup>7</sup><br>9 | 1 <sup>8</sup><br>9 | 1 <sup>4</sup><br>8 9 | 6                     | 1 <sup>2</sup><br>4   | 3                     | 1 <sup>2</sup><br>9 |
| 4 <sup>7</sup><br>9   | 2                   | 1                   | 7                   | 9                     | 4 <sup>5</sup><br>9   | 4 <sup>5</sup><br>9   | 3                     | 6                   |
| 4 <sup>6</sup><br>9   | 3                   | 5                   | 1 <sup>8</sup><br>9 | 1 <sup>2</sup><br>4   | 6                     | 1 <sup>2</sup><br>4   | 7                     | 1 <sup>2</sup><br>9 |
| 6 <sup>7</sup><br>9   | 8                   | 7                   | 9                   | 1 <sup>2</sup><br>9   | 3                     | 1 <sup>2</sup><br>9   | 5                     | 4                   |

|                 |                     |                   |                 |                 |               |               |                   |               |
|-----------------|---------------------|-------------------|-----------------|-----------------|---------------|---------------|-------------------|---------------|
| 9               | 2 <sup>5</sup><br>7 | 6                 | 1 2 3<br>5      | 2 3<br>5        | 1 3<br>4      | 1 2<br>4      | 2 3<br>5          | 8             |
| 1 2 3<br>5<br>7 | 4                   | 2 3<br>5<br>7     | 8               | 2 3<br>7        | 1 3           | 1 2<br>6      | 2 3<br>5 6        | 9             |
| 1 2 3<br>5      | 2 5<br>8            | 2 3<br>5<br>8     | 1 2 3<br>5<br>9 | 2 3<br>4<br>9   | 6             | 7             | 2 3<br>4 5        | 1 3<br>4 5    |
| 5<br>7          | 9                   | 4 5<br>7          | 1 2 3<br>6      | 2 3<br>6<br>8   | 1 3<br>4<br>8 | 1<br>4<br>8   | 3<br>6<br>7 8     | 1 3<br>6<br>7 |
| 8               | 3                   | 4<br>7            | 1<br>6<br>9     | 5               | 1<br>4<br>9   | 1<br>4<br>9   | 6<br>7<br>9       | 2             |
| 2<br>6          | 2<br>6              | 1                 | 3<br>4<br>9     | 3<br>8 9        | 7             | 5             | 4<br>8 9          | 3<br>4        |
| 2<br>6<br>7     | 2<br>6<br>7 8       | 2<br>7 8 9        | 7<br>6<br>9     | 1               | 5             | 3             | 4<br>7 8 9        | 4<br>6<br>7   |
| 3<br>5 6<br>7   | 5 6<br>7 8          | 5<br>7 8 9        | 4               | 3<br>6<br>7 8 9 | 2             | 6<br>8 9      | 1                 | 5 6<br>7      |
| 4               | 1                   | 2 3<br>5<br>7 8 9 | 3<br>6<br>7 8 9 | 3<br>6<br>7 8 9 | 3             | 2<br>6<br>8 9 | 2<br>5 6<br>7 8 9 | 5 6<br>7      |

|                       |                       |                     |                     |                       |                       |                       |                     |                     |
|-----------------------|-----------------------|---------------------|---------------------|-----------------------|-----------------------|-----------------------|---------------------|---------------------|
| 8                     | 3                     | 1 <sup>9</sup>      | 2 <sup>6</sup><br>4 | 2 <sup>6</sup><br>4   | 6 <sup>4</sup><br>6   | 7                     | 5                   | 1 <sup>9</sup>      |
| 2 <sup>7</sup><br>9   | 2 <sup>6</sup><br>7   | 6                   | 9                   | 5                     | 1                     | 4                     | 3 <sup>8</sup><br>9 | 3 <sup>8</sup><br>9 |
| 5                     | 1 <sup>9</sup>        | 4                   | 3 <sup>8</sup><br>9 | 3 <sup>8</sup><br>9   | 7                     | 2                     | 6                   | 1 <sup>9</sup>      |
| 1 <sup>2</sup><br>7 9 | 8                     | 5 <sup>6</sup><br>9 | 4                   | 2 <sup>3</sup><br>6   | 3 <sup>6</sup><br>9   | 1 <sup>5</sup><br>8   | 9                   | 7                   |
| 1 <sup>2</sup><br>7 9 | 1 <sup>2</sup><br>6 9 | 3 <sup>6</sup><br>9 | 5                   | 2 <sup>3</sup><br>7   | 3 <sup>6</sup><br>8 9 | 1 <sup>3</sup><br>8   | 2 <sup>3</sup><br>8 | 4                   |
| 2 <sup>4</sup><br>7 9 | 2 <sup>4</sup><br>9   | 3 <sup>5</sup><br>7 | 2 <sup>3</sup><br>7 | 1 <sup>8</sup><br>9   | 3 <sup>8</sup><br>9   | 6                     | 2 <sup>3</sup><br>8 | 3 <sup>5</sup><br>8 |
| 1 <sup>4</sup><br>9   | 5                     | 8                   | 1 <sup>3</sup><br>6 | 3 <sup>4</sup><br>6   | 4 <sup>6</sup><br>9   | 3 <sup>6</sup><br>9   | 7                   | 2                   |
| 6                     | 7                     | 1 <sup>9</sup>      | 1 <sup>3</sup><br>8 | 3 <sup>8</sup><br>9   | 2                     | 5 <sup>3</sup><br>8 9 | 4 <sup>5</sup><br>8 | 3 <sup>5</sup><br>8 |
| 3                     | 4                     | 2                   | 7 8                 | 4 <sup>7</sup><br>8 9 | 5                     | 8 9                   | 1                   | 6                   |

|     |   |       |     |       |     |       |     |     |   |   |       |     |     |
|-----|---|-------|-----|-------|-----|-------|-----|-----|---|---|-------|-----|-----|
| 3   | 7 | 5     | 1   | 4     | 9   | 8     | 2   | 6   | 4 | 6 | 4     | 6   | 9   |
| 1 2 | 1 | 1 2   | 3   | 4 5   | 3   | 7     | 1   | 3   | 1 | 3 | 1     | 4 5 | 8 9 |
| 8   | 6 | 8     | 5   | 9     | 9   | 7     | 8 9 | 4 5 | 9 | 9 | 4 5   | 8 9 |     |
| 4   | 9 | 1     | 6   | 5     | 3   | 2     | 1   | 3   | 7 | 1 | 5     | 8   |     |
|     |   | 8     |     |       |     |       | 8   |     |   |   |       |     |     |
| 5   | 8 | 2     | 2   | 2     | 1   | 3     | 1   | 3   | 1 | 3 | 1     | 6   |     |
|     |   | 9     | 7   | 9     | 7   | 9     |     | 6   | 4 | 6 | 4     | 6   |     |
| 7   | 1 | 3     | 6   | 4     | 8   | 1     | 1   | 2   | 3 | 1 | 2     | 3   |     |
|     |   |       |     |       | 5   | 3     |     | 9   | 5 | 9 | 1     | 5   |     |
| 1 2 |   | 1 2 3 | 2 3 | 1 2 3 |     |       |     |     |   |   |       | 9   |     |
| 9   | 4 | 9     | 9   | 9     | 5 6 | 7     | 8   |     |   |   | 5 6   |     |     |
| 1   | 1 | 3     | 1   | 3     | 2 3 | 1 2 3 | 4   | 5   | 1 |   | 1     | 6   |     |
| 6   |   | 6     |     |       |     |       |     |     | 6 |   | 7 8 9 | 6   |     |
| 8 9 |   | 7 8 9 |     |       |     |       |     |     | 9 |   | 7 8 9 |     |     |
| 1   |   |       |     |       |     |       | 9   | 1   | 1 |   |       | 3   |     |
| 6   | 2 | 4     | 5   | 5     |     |       | 6   |     | 6 |   |       |     |     |
| 8   |   |       | 7   | 7     |     |       | 8   |     |   |   |       |     |     |
| 1   |   | 1     | 3   |       | 1   | 3     | 4   | 1   | 2 | 1 | 2     |     |     |
|     | 5 |       | 8   | 6     |     |       |     |     |   |   |       |     |     |
| 9   |   | 7 9   |     |       |     |       |     |     | 9 | 7 | 9     |     |     |

|                               |                             |                               |                               |                               |                               |                               |                               |
|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 1 <sup>3</sup>                | 2 <sup>7</sup>              | 3 <sup>3</sup>                | 5 <sup>1</sup> <sub>7 8</sub> | 9 <sup>2</sup> <sub>3</sub>   | 6 <sup>2</sup> <sub>7 9</sub> | 4 <sup>2</sup> <sub>7 8</sub> |                               |
| 8                             | 6                           | 5 <sup>4</sup> <sub>2 3</sub> | 4 <sup>2</sup> <sub>4</sub>   |                               | 7 <sup>7</sup> <sub>9</sub>   | 1 <sup>2</sup> <sub>7 9</sub> |                               |
| 9 <sup>1</sup> <sub>7</sub>   |                             | 4 <sup>2</sup> <sub>8</sub>   | 6 <sup>1</sup> <sub>7</sub>   | 3 <sup>2</sup> <sub>5 8</sub> |                               | 5 <sup>5</sup> <sub>8</sub>   |                               |
| 2 <sup>1</sup> <sub>7 8</sub> |                             | 3 <sup>3</sup> <sub>7</sub>   | 6 <sup>4</sup> <sub>2</sub>   | 9 <sup>2</sup> <sub>4</sub>   | 5 <sup>1</sup> <sub>7 8</sub> | 3 <sup>4</sup> <sub>7 8</sub> | 3 <sup>3</sup> <sub>7 8</sub> |
| 1 <sup>3</sup>                | 1 <sup>5</sup> <sub>7</sub> | 6 <sup>4</sup> <sub>2</sub>   | 4 <sup>2</sup> <sub>4</sub>   | 8 <sup>1</sup> <sub>7 9</sub> | 5 <sup>5</sup> <sub>7 9</sub> | 3 <sup>5</sup> <sub>7 9</sub> |                               |
| 4                             | 5 <sup>5</sup> <sub>8</sub> | 9 <sup>1</sup> <sub>3</sub>   | 1 <sup>1</sup> <sub>7</sub>   | 3 <sup>1</sup> <sub>7</sub>   | 6 <sup>5</sup> <sub>8</sub>   | 2 <sup>5</sup> <sub>8 9</sub> |                               |
| 6                             | 3                           | 2                             | 7 <sup>5</sup> <sub>8</sub>   | 4 <sup>5</sup> <sub>8 9</sub> | 1 <sup>5</sup> <sub>8 9</sub> | 6 <sup>5</sup> <sub>8 9</sub> |                               |
| 5 <sup>4</sup> <sub>9</sub>   | 1 <sup>8</sup> <sub>9</sub> | 3 <sup>8</sup> <sub>9</sub>   | 2 <sup>1</sup> <sub>5</sub>   | 6 <sup>2</sup> <sub>3</sub>   | 4 <sup>7</sup> <sub>8</sub>   | 6 <sup>7</sup> <sub>8</sub>   |                               |
| 7 <sup>4</sup> <sub>9</sub>   | 8 <sup>1</sup> <sub>9</sub> | 1 <sup>1</sup> <sub>5</sub>   | 6 <sup>4</sup> <sub>5</sub>   | 3 <sup>2</sup> <sub>3</sub>   | 5 <sup>4</sup> <sub>5</sub>   | 6 <sup>3</sup> <sub>4 5</sub> |                               |

|                               |                               |                                 |                                 |                               |                               |                               |                               |
|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 4 <sup>3</sup> <sub>8</sub>   | 6 <sup>3</sup> <sub>7 8</sub> | 2 <sup>4</sup> <sub>6 9</sub>   | 1 <sup>4</sup> <sub>8 9</sub>   | 1 <sup>4</sup> <sub>8</sub>   | 6 <sup>4</sup> <sub>7 9</sub> | 3 <sup>4</sup> <sub>7</sub>   | 5 <sup>4</sup> <sub>6 9</sub> |
| 1 <sup>7</sup> <sub>5 6</sub> | 4 <sup>5</sup> <sub>7</sub>   | 2 <sup>4</sup> <sub>5 6 9</sub> | 3 <sup>4</sup> <sub>7 9</sub>   | 8 <sup>2</sup> <sub>4</sub>   | 1 <sup>2</sup> <sub>4 6</sub> | 6 <sup>7</sup> <sub>9</sub>   |                               |
| 9 <sup>3</sup> <sub>5 6</sub> | 4 <sup>3</sup> <sub>8</sub>   | 7 <sup>4</sup> <sub>8</sub>     | 3 <sup>4</sup> <sub>5 6 8</sub> | 1 <sup>1</sup> <sub>4</sub>   | 5 <sup>2</sup> <sub>7 9</sub> | 2 <sup>2</sup> <sub>4</sub>   | 1 <sup>2</sup> <sub>6</sub>   |
| 4 <sup>1</sup> <sub>8</sub>   | 7 <sup>4</sup> <sub>7 8</sub> | 3 <sup>4</sup> <sub>6 9</sub>   | 6 <sup>2</sup> <sub>4 5</sub>   | 9 <sup>2</sup> <sub>7 9</sub> | 5 <sup>1</sup> <sub>4</sub>   | 8 <sup>1</sup> <sub>7 9</sub> |                               |
| 2 <sup>2</sup> <sub>3</sub>   | 1 <sup>2</sup> <sub>3</sub>   | 6 <sup>4</sup> <sub>5</sub>     | 9 <sup>2</sup> <sub>7 9</sub>   | 1 <sup>4</sup> <sub>7</sub>   | 8 <sup>1</sup> <sub>4</sub>   | 3 <sup>4</sup> <sub>5 6</sub> |                               |
| 4 <sup>2</sup> <sub>5 8</sub> | 9 <sup>4</sup> <sub>5</sub>   | 1 <sup>4</sup> <sub>7 8</sub>   | 6 <sup>2</sup> <sub>4 5 8</sub> | 9 <sup>4</sup> <sub>7</sub>   | 5 <sup>4</sup> <sub>7</sub>   | 3 <sup>4</sup> <sub>7</sub>   |                               |
| 7 <sup>1</sup> <sub>2 3</sub> | 8 <sup>2</sup> <sub>3</sub>   | 6 <sup>1</sup> <sub>2</sub>     | 9 <sup>1</sup> <sub>2</sub>     | 5 <sup>1</sup> <sub>2</sub>   | 4 <sup>1</sup> <sub>2</sub>   | 3 <sup>6</sup> <sub>7 9</sub> |                               |
| 2 <sup>2</sup> <sub>5 6</sub> | 5 <sup>2</sup> <sub>6</sub>   | 5 <sup>4</sup> <sub>9</sub>     | 1 <sup>1</sup> <sub>4</sub>     | 8 <sup>1</sup> <sub>4</sub>   | 3 <sup>2</sup> <sub>8</sub>   | 6 <sup>7</sup> <sub>9</sub>   |                               |
| 2 <sup>2</sup> <sub>3</sub>   | 4 <sup>1</sup> <sub>3</sub>   | 2 <sup>2</sup> <sub>3</sub>     | 5 <sup>1</sup> <sub>2</sub>     | 7 <sup>1</sup> <sub>2</sub>   | 6 <sup>1</sup> <sub>2</sub>   | 9 <sup>6</sup> <sub>9</sub>   |                               |

|                             |                             |                               |                               |                               |                               |                               |  |
|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--|
| 6 <sup>5</sup> <sub>3</sub> | 7 <sup>2</sup> <sub>3</sub> | 4 <sup>2</sup> <sub>8</sub>   | 9 <sup>2</sup> <sub>5 8</sub> | 1 <sup>2</sup> <sub>5 8</sub> | 3 <sup>2</sup> <sub>5 6</sub> | 9 <sup>2</sup> <sub>7 8</sub> |  |
| 4                           | 2                           | 9 <sup>5</sup> <sub>7 8</sub> | 1 <sup>5</sup> <sub>6</sub>   | 3 <sup>5</sup> <sub>6</sub>   | 9 <sup>2</sup> <sub>7 8</sub> | 6 <sup>2</sup> <sub>3</sub>   |  |
| 8 <sup>5</sup> <sub>3</sub> | 1 <sup>2</sup> <sub>3</sub> | 6 <sup>2</sup> <sub>5</sub>   | 5 <sup>4</sup> <sub>5</sub>   | 9 <sup>2</sup> <sub>4 5</sub> | 3 <sup>4</sup> <sub>5</sub>   | 7 <sup>4</sup> <sub>5</sub>   |  |
| 3 <sup>9</sup>              | 7 <sup>2</sup> <sub>3</sub> | 5 <sup>1</sup> <sub>2 3</sub> | 8 <sup>1</sup> <sub>2 3</sub> | 6 <sup>4</sup> <sub>6</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 4 <sup>1</sup> <sub>2 3</sub> |  |
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| 3 <sup>1</sup> <sub>4</sub> | 8 <sup>2</sup> <sub>3</sub> | 5 <sup>4</sup> <sub>6</sub>   | 7 <sup>3</sup> <sub>4</sub>   | 6 <sup>3</sup> <sub>4</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 4 <sup>1</sup> <sub>2 3</sub> |  |
| 1 <sup>8</sup> <sub>4</sub> | 9 <sup>2</sup> <sub>5</sub> | 5 <sup>2</sup> <sub>3</sub>   | 6 <sup>4</sup> <sub>5 6</sub> | 3 <sup>4</sup> <sub>5 6</sub> | 9 <sup>1</sup> <sub>2 3</sub> | 7 <sup>4</sup> <sub>5</sub>   |  |
| 7 <sup>2</sup> <sub>3</sub> | 1 <sup>2</sup> <sub>3</sub> | 4 <sup>5</sup> <sub>8</sub>   | 3 <sup>5</sup> <sub>8 9</sub> | 6 <sup>5</sup> <sub>8 9</sub> | 9 <sup>3</sup> <sub>4</sub>   | 5 <sup>3</sup> <sub>8</sub>   |  |
| 5 <sup>4</sup> <sub>3</sub> | 6 <sup>3</sup> <sub>7</sub> | 8 <sup>1</sup> <sub>4</sub>   | 2 <sup>1</sup> <sub>3</sub>   | 9 <sup>1</sup> <sub>4</sub>   | 3 <sup>1</sup> <sub>2 3</sub> | 6 <sup>1</sup> <sub>4</sub>   |  |

|                                 |                                 |                                 |                               |                               |                               |                               |  |
|---------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--|
| 1 <sup>9</sup> <sub>7</sub>     | 1 <sup>6</sup> <sub>9</sub>     | 1 <sup>7</sup> <sub>9</sub>     | 2 <sup>5</sup> <sub>9</sub>   | 8 <sup>5</sup> <sub>9</sub>   | 3 <sup>1</sup> <sub>2 6</sub> | 4 <sup>1</sup> <sub>2 6</sub> |  |
| 2                               | 5                               | 3                               | 1 <sup>4</sup> <sub>7</sub>   | 6 <sup>4</sup> <sub>7</sub>   | 9 <sup>7</sup> <sub>6</sub>   | 8 <sup>1</sup> <sub>2 6</sub> |  |
| 4 <sup>1</sup> <sub>7 8 9</sub> | 6 <sup>7</sup> <sub>8 9</sub>   | 3 <sup>2</sup> <sub>9</sub>     | 9 <sup>1</sup> <sub>7</sub>   | 6 <sup>1</sup> <sub>2 3</sub> | 8 <sup>1</sup> <sub>2 6</sub> | 5 <sup>1</sup> <sub>2 6</sub> |  |
| 1 <sup>5</sup> <sub>8 9</sub>   | 4 <sup>1</sup> <sub>5 8 9</sub> | 2 <sup>5</sup> <sub>7 8</sub>   | 9 <sup>5</sup> <sub>7 8</sub> | 3 <sup>1</sup> <sub>5 6</sub> | 6 <sup>1</sup> <sub>7</sub>   | 9 <sup>1</sup> <sub>5 6</sub> |  |
| 1 <sup>3</sup> <sub>5</sub>     | 6 <sup>4</sup> <sub>5 7</sub>   | 9 <sup>4</sup> <sub>7</sub>     | 8 <sup>1</sup> <sub>4</sub>   | 5 <sup>1</sup> <sub>2 3</sub> | 6 <sup>1</sup> <sub>7</sub>   | 9 <sup>1</sup> <sub>5 6</sub> |  |
| 7 <sup>2</sup> <sub>8</sub>     | 5 <sup>3</sup> <sub>8</sub>     | 3 <sup>4</sup> <sub>5 6 8</sub> | 1 <sup>4</sup> <sub>5 6</sub> | 9 <sup>2</sup> <sub>5 6</sub> | 6 <sup>2</sup> <sub>4</sub>   | 8 <sup>1</sup> <sub>2 6</sub> |  |
| 1 <sup>3</sup> <sub>5</sub>     | 9 <sup>1</sup> <sub>7 9</sub>   | 5 <sup>4</sup> <sub>7 9</sub>   | 6 <sup>1</sup> <sub>4</sub>   | 8 <sup>1</sup> <sub>4</sub>   | 3 <sup>1</sup> <sub>2 6</sub> | 9 <sup>1</sup> <sub>5 6</sub> |  |
| 6 <sup>1</sup> <sub>7 8 9</sub> | 2 <sup>4</sup> <sub>7 8 9</sub> | 9 <sup>1</sup> <sub>4</sub>     | 5 <sup>1</sup> <sub>4</sub>   | 3 <sup>1</sup> <sub>2 6</sub> | 6 <sup>1</sup> <sub>7</sub>   | 8 <sup>1</sup> <sub>5 3</sub> |  |
| 1 <sup>5</sup> <sub>8</sub>     | 3 <sup>1</sup> <sub>7 8</sub>   | 4 <sup>6</sup> <sub>7 8</sub>   | 2 <sup>6</sup> <sub>5</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 6 <sup>1</sup> <sub>7</sub>   | 8 <sup>1</sup> <sub>5 6</sub> |  |

|                                 |                                 |                                 |                                 |                                 |                               |                               |  |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|--|
| 4 <sup>7</sup> <sub>8 9</sub>   | 2 <sup>4</sup> <sub>7 8 9</sub> | 3 <sup>5</sup> <sub>6 8 9</sub> | 1 <sup>4</sup> <sub>5 6 8</sub> | 3 <sup>7</sup> <sub>5</sub>     | 4 <sup>4</sup> <sub>7 8</sub> | 3 <sup>4</sup> <sub>7 8</sub> |  |
| 4 <sup>8</sup>                  | 1 <sup>5</sup> <sub>8</sub>     | 6 <sup>3</sup> <sub>4 5 8</sub> | 7 <sup>2</sup> <sub>5</sub>     | 9 <sup>4</sup> <sub>8</sub>     | 3 <sup>1</sup> <sub>2 3</sub> | 6 <sup>1</sup> <sub>4 8</sub> |  |
| 4 <sup>7</sup> <sub>8 9</sub>   | 5 <sup>4</sup> <sub>7 8 9</sub> | 3 <sup>8</sup> <sub>9</sub>     | 2 <sup>4</sup> <sub>8</sub>     | 6 <sup>1</sup> <sub>4 7 8</sub> | 3 <sup>1</sup> <sub>2 3</sub> | 9 <sup>1</sup> <sub>4 8</sub> |  |
| 1 <sup>5</sup> <sub>7 8</sub>   | 3 <sup>1</sup> <sub>7 8</sub>   | 2 <sup>5</sup> <sub>8</sub>     | 9 <sup>1</sup> <sub>7 8</sub>   | 4 <sup>1</sup> <sub>7 8</sub>   | 3 <sup>1</sup> <sub>2 3</sub> | 6 <sup>1</sup> <sub>4 8</sub> |  |
| 1 <sup>5</sup> <sub>8 9</sub>   | 3 <sup>1</sup> <sub>9</sub>     | 7 <sup>4</sup> <sub>5 8</sub>   | 5 <sup>1</sup> <sub>2 3</sub>   | 9 <sup>1</sup> <sub>2 3</sub>   | 3 <sup>1</sup> <sub>2 3</sub> | 6 <sup>1</sup> <sub>4 8</sub> |  |
| 1 <sup>6</sup> <sub>7 8 9</sub> | 4 <sup>1</sup> <sub>8</sub>     | 2 <sup>3</sup> <sub>6</sub>     | 9 <sup>1</sup> <sub>8</sub>     | 3 <sup>1</sup> <sub>2 3</sub>   | 6 <sup>1</sup> <sub>4 8</sub> | 5 <sup>1</sup> <sub>2 3</sub> |  |
| 2                               | 8 <sup>4</sup> <sub>7 9</sub>   | 5 <sup>1</sup> <sub>7 9</sub>   | 6 <sup>4</sup> <sub>7</sub>     | 3 <sup>1</sup> <sub>2 3</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 4 <sup>1</sup> <sub>7 8</sub> |  |
| 1 <sup>4</sup> <sub>7 9</sub>   | 5 <sup>3</sup> <sub>8</sub>     | 6 <sup>1</sup> <sub>2 3</sub>   | 8 <sup>1</sup> <sub>7 9</sub>   | 5 <sup>1</sup> <sub>2 3</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 4 <sup>1</sup> <sub>7 9</sub> |  |
| 3                               | 6 <sup>1</sup> <sub>7 9</sub>   | 4 <sup>7</sup> <sub>9</sub>     | 2 <sup>8</sup> <sub>5</sub>     | 5 <sup>1</sup> <sub>7 9</sub>   | 6 <sup>1</sup> <sub>2 3</sub> | 9 <sup>1</sup> <sub>2 3</sub> |  |

|                                 |                               |                               |                               |                                 |                               |                               |                               |
|---------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 2 <sup>7</sup> <sub>6</sub>     | 1 <sup>2</sup> <sub>6</sub>   | 1 <sup>9</sup> <sub>7</sub>   | 1 <sup>2</sup> <sub>3</sub>   | 2 <sup>2</sup> <sub>3</sub>     | 1 <sup>3</sup> <sub>5</sub>   | 1 <sup>2</sup> <sub>3</sub>   | 4 <sup>1</sup> <sub>2 3</sub> |
| 3 <sup>1</sup> <sub>4 7</sub>   | 2 <sup>1</sup> <sub>4</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 6 <sup>1</sup> <sub>5</sub>   | 4 <sup>1</sup> <sub>3</sub>     | 9 <sup>1</sup> <sub>2 3</sub> | 8 <sup>1</sup> <sub>2 3</sub> |                               |
| 2 <sup>9</sup>                  | 8 <sup>5</sup> <sub>9</sub>   | 5 <sup>7</sup> <sub>4</sub>   | 7 <sup>1</sup> <sub>9</sub>   | 4 <sup>1</sup> <sub>3</sub>     | 6 <sup>1</sup> <sub>2 3</sub> | 9 <sup>1</sup> <sub>2 3</sub> |                               |
| 5 <sup>6</sup> <sub>7 8</sub>   | 5 <sup>6</sup> <sub>7</sub>   | 3 <sup>1</sup> <sub>8 9</sub> | 3 <sup>1</sup> <sub>5 6</sub> | 2 <sup>1</sup> <sub>7 8 9</sub> | 4 <sup>1</sup> <sub>7 8</sub> | 6 <sup>1</sup> <sub>7 8</sub> |                               |
| 7 <sup>6</sup> <sub>8</sub>     | 9 <sup>4</sup> <sub>8</sub>   | 4 <sup>1</sup> <sub>8</sub>   | 2 <sup>3</sup> <sub>7 8</sub> | 5 <sup>1</sup> <sub>6</sub>     | 9 <sup>1</sup> <sub>2 3</sub> | 8 <sup>1</sup> <sub>2 3</sub> |                               |
| 1 <sup>4</sup> <sub>5 6 7</sub> | 2 <sup>4</sup> <sub>8</sub>   | 3 <sup>5</sup> <sub>7 8</sub> | 6 <sup>3</sup> <sub>7</sub>   | 4 <sup>1</sup> <sub>2 3</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 8 <sup>1</sup> <sub>2 3</sub> |                               |
| 2 <sup>5</sup> <sub>8 9</sub>   | 1 <sup>2</sup> <sub>5</sub>   | 6 <sup>7</sup> <sub>8 9</sub> | 4 <sup>2</sup> <sub>7 9</sub> | 3 <sup>1</sup> <sub>2 3</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 8 <sup>1</sup> <sub>2 3</sub> |                               |
| 4 <sup>1</sup> <sub>2 3</sub>   | 7 <sup>1</sup> <sub>2 3</sub> | 5 <sup>2</sup> <sub>9</sub>   | 8 <sup>1</sup> <sub>2 3</sub> | 6 <sup>1</sup> <sub>2 3</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 8 <sup>1</sup> <sub>2 3</sub> |                               |
| 2 <sup>5</sup> <sub>8 9</sub>   | 6 <sup>2</sup> <sub>9</sub>   | 1 <sup>3</sup> <sub>7 9</sub> | 4 <sup>2</sup> <sub>7 9</sub> | 3 <sup>1</sup> <sub>2 3</sub>   | 9 <sup>1</sup> <sub>2 3</sub> | 8 <sup>1</sup> <sub>2 3</sub> |                               |

|                 |            |              |          |   |        |            |                 |        |
|-----------------|------------|--------------|----------|---|--------|------------|-----------------|--------|
| 7               | 4 5<br>8   | 5<br>8 9     | 6        | 3 | 2      | 4 5<br>9   | 4 5<br>9        | 1      |
| 2<br>4          | 2<br>6     | 2<br>6       | 1        | 5 | 4      | 3<br>7     | 8               | 3<br>7 |
| 3               | 1<br>4 5   | 1<br>5       |          |   | 4      | 2<br>4 5   | 2<br>4 5        | 6      |
| 1               | 5<br>8     | 5<br>8       | 9        | 4 | 7      | 6          | 5               | 2      |
| 2<br>5 6        | 2<br>5 6   | 4            | 3        | 1 | 5 6    | 5<br>8 9   | 7               | 5<br>8 |
| 5 6             | 3<br>9     | 7            | 8        | 2 | 5 6    | 1          | 4               | 3<br>4 |
| 2<br>4 5 6<br>8 | 7          | 1 2 3<br>5 6 | 4 5      |   | 1<br>4 | 2 3<br>4 5 | 2 3<br>4 5      | 3      |
| 4 5<br>8        | 1<br>4 5   | 3<br>1       | 2        |   | 1<br>4 | 4 5<br>7 8 | 6               | 9      |
| 9               | 2<br>4 5 6 | 2<br>5 6     | 4 5<br>7 |   | 6      | 3          | 2<br>4 5<br>7 8 | 1      |

|            |        |          |            |            |            |            |            |          |
|------------|--------|----------|------------|------------|------------|------------|------------|----------|
| 3          | 5      | 7 8 9    | 6          | 2<br>4     | 1 2<br>4   | 1 2<br>4   | 1 2<br>4   | 1<br>4   |
|            |        | 4        | 1 2 3<br>5 | 2 3<br>5   | 1 2 3<br>5 | 1 2 3<br>5 | 3<br>5 6   | 1<br>5 6 |
| 7 8 9      | 8 9    |          | 3<br>8     | 7          | 4          | 8          | 9          | 3        |
| 6          | 2      | 1        | 5          | 7          |            | 8          | 9          | 4 5      |
| 1 2<br>4   | 1<br>4 | 2 3<br>6 | 7          | 2 3<br>8   | 5          | 1          | 3<br>4     | 3<br>4   |
| 4 5<br>8 9 | 7      | 5<br>8 9 | 3<br>8 9   | 1          | 3<br>8 9   | 2          | 4 5<br>8 9 | 3<br>8 9 |
| 1 2<br>5   | 1<br>6 | 2 3<br>5 | 4          | 2 3<br>8   | 2 3<br>6   | 1 3<br>6   | 3<br>5 6   | 1<br>5 6 |
| 2<br>5     | 3      | 6        | 2<br>8     | 9          | 8          | 4<br>7     | 1          | 4<br>7   |
| 1 2<br>4   | 1<br>4 | 2        | 1 2 3<br>8 | 2 3<br>4   | 1 2 3<br>6 | 5          | 3<br>6     | 3<br>6   |
| 1<br>4 5   | 1<br>4 | 5        | 1<br>5     | 3<br>4 5 6 | 7          | 3<br>6     | 8          | 2        |

|          |        |        |        |        |        |          |   |        |
|----------|--------|--------|--------|--------|--------|----------|---|--------|
| 1        | 3      | 2      | 1 2    | 6      | 8      | 5        | 4 | 9      |
| 8        | 6<br>9 | 4      | 1<br>9 | 5      | 3      | 1<br>6   | 2 | 7      |
| 1 2<br>9 | 5      | 2<br>6 | 7      | 2<br>9 | 4      | 1 3<br>6 | 8 | 3<br>6 |
| 2<br>4 5 | 2<br>4 | 2<br>6 | 4 5    | 4      | 1      | 9        | 3 | 2<br>8 |
| 2<br>4 5 | 2<br>4 | 2<br>9 | 4 5    | 3<br>4 | 3<br>8 | 6        | 7 | 1<br>8 |
| 3        | 8      | 1      | 2<br>9 | 7      | 2<br>9 | 4        | 6 | 5      |
| 2<br>9   | 1      | 3      | 6      | 2<br>9 | 7      | 8        | 5 | 4      |
| 2<br>4   | 2<br>4 | 5      | 8      | 1      | 2<br>9 | 3<br>6   | 7 | 3<br>6 |
| 6        | 7      | 8      | 4      | 3<br>4 | 5      | 2        | 9 | 1      |

|            |          |            |            |              |            |        |        |        |
|------------|----------|------------|------------|--------------|------------|--------|--------|--------|
| 2<br>5 6   | 5 6<br>9 | 3          | 1 2<br>6   | 1 2<br>7 8 9 | 1 2<br>7 8 | 4      | 1<br>9 | 1<br>5 |
| 2          |          | 2          | 5          | 3            | 1 2<br>4   | 6      | 8      | 1<br>7 |
| 8          | 1        | 4 5 6<br>7 | 4          | 6<br>9       | 4          | 5      | 3      | 2      |
| 1 2 3<br>6 | 3<br>7 8 | 1 2<br>6   | 1 2 3<br>7 | 1 2<br>9     | 1 2 3<br>6 | 1      | 5      | 4      |
| 4          | 5 6<br>7 | 1<br>5 6   | 8          | 1<br>7       | 5<br>9     | 2      | 3      |        |
| 1 2 3<br>5 | 3<br>8   | 9          | 1 2 3<br>4 | 1 2<br>4 5   | 1 2 3<br>4 | 1      | 7      | 6      |
| 7          | 5<br>8 9 | 3<br>5 8   | 1 2 3<br>4 | 6            | 1 2 3<br>8 | 3<br>5 | 1<br>4 | 1<br>5 |
| 1<br>3     | 4        | 1<br>6     | 1<br>7     | 3            | 5          | 2      | 3<br>6 | 8      |
| 1<br>5 6   | 2        | 1<br>5 6   | 1<br>4     | 3<br>8       | 9          | 3<br>5 | 1<br>4 | 1<br>5 |

|              |              |        |            |          |              |            |            |            |
|--------------|--------------|--------|------------|----------|--------------|------------|------------|------------|
| 1            | 1<br>5       | 2      | 1<br>5 6   | 4        | 5 6<br>9     | 3          | 1<br>5 6   | 8          |
| 6            | 1<br>5       | 3<br>1 | 1<br>5     | 5        | 3            | 1<br>5     | 4          | 1<br>9     |
| 1<br>3       | 4            | 8      | 1<br>5 6   | 5 6<br>9 | 3<br>5 6     | 7          | 1 2<br>5 6 | 1 2<br>6   |
| 5            | 1 2 3<br>8   | 1<br>6 | 2<br>8     | 2<br>8 9 | 4<br>8 9     | 1 2<br>4   | 1 2 3      | 7          |
| 1 2 3<br>7 8 | 1 2 3<br>7 8 | 1<br>6 | 4 5 6<br>8 | 2<br>5 6 | 4 5 6<br>8   | 9          | 1 2 3<br>4 | 1 2 3      |
| 2<br>8 9     | 2<br>8 9     | 4      | 3          | 7        | 1            | 2<br>8     | 2<br>6     | 5          |
| 2<br>7 8     | 2<br>7 8     | 5      | 9          | 1        | 4 5 6<br>7 8 | 4 5 6      | 2 3<br>5 6 | 2 3<br>4   |
| 4            | 1<br>5       | 3      | 2          | 5 6      | 5 6<br>7     | 1<br>5 6   | 8          | 1<br>6     |
| 1 2<br>7 8 9 | 6            | 1<br>5 | 4 5<br>7 8 | 5<br>8   | 3<br>4 5     | 1 2<br>4 5 | 1 2 3<br>5 | 1 2 3<br>9 |

|          |              |              |          |          |            |            |          |            |
|----------|--------------|--------------|----------|----------|------------|------------|----------|------------|
| 4 5<br>7 | 4 5<br>7 8 9 | 1            | 2 3<br>5 | 2<br>5   | 2 3<br>4   | 4          | 6        | 3<br>4 5 6 |
| 4 5<br>9 | 6            | 4 5<br>8 9   | 2<br>5   | 1 2<br>5 | 1 2 3<br>4 | 1          | 1<br>4 5 | 3<br>7     |
| 3        | 4 5<br>7     | 4 5<br>7     | 2<br>5   | 6        | 1 2<br>4   | 8          | 9        | 1 2<br>5   |
| 8        | 1<br>4 5     | 4 5 6<br>7   | 2<br>7   | 9        | 3          | 1<br>4 5 6 | 1<br>5   |            |
| 1<br>5 6 | 3            | 5 6<br>7 9   | 4        | 1<br>7   | 6          | 2          | 1<br>5 6 | 1<br>5 8 9 |
| 2        | 1<br>4       | 4<br>7       | 6<br>9   | 8        | 3          | 5          | 1<br>4   | 1<br>6     |
| 5 6<br>7 | 5<br>7 8 9   | 5 6<br>7 8 9 | 1<br>7   | 2<br>5   | 2 3<br>6   |            | 3        | 4          |
| 5 6<br>7 | 2            | 5 6<br>7 8 9 | 3<br>5 6 | 4        | 3<br>6     | 1          | 1<br>3   | 1<br>3     |
| 1<br>4   | 1<br>4       | 4            | 3        |          | 8          | 5          | 2        | 6          |

|                       |                       |                         |                       |                       |                       |                       |                       |                         |
|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|
| 1 <sup>3</sup><br>6   | 8                     | 1 <sup>3</sup><br>5 6   | 4 <sup>3</sup><br>5   | 7                     | 4 <sup>2 3</sup><br>6 | 2 <sup>3</sup><br>5 6 | 9                     | 1 <sup>2 3</sup><br>5 6 |
| 7                     | 1 <sup>3</sup><br>5 9 | 1 <sup>3</sup><br>5 6 9 | 5 <sup>3</sup><br>9   | 2 <sup>5 6</sup><br>9 | 8                     | 2 <sup>3</sup><br>5 6 | 1 <sup>2</sup><br>5 6 | 4                       |
| 3 <sup>6</sup><br>9   | 4                     | 2                       | 5 <sup>3</sup><br>9   | 5 <sup>6</sup><br>9   | 1                     | 8                     | 7                     | 3 <sup>5 6</sup>        |
| 1 <sup>3</sup><br>6 9 | 1 <sup>2 3</sup><br>9 | 4                       | 1 <sup>3</sup><br>7 9 | 1 <sup>6</sup><br>9 7 | 3 <sup>6</sup><br>9   | 2 <sup>3</sup><br>5 6 | 1 <sup>2</sup><br>5 6 | 8                       |
| 8                     | 1 <sup>3</sup>        | 7                       | 2                     | 1 <sup>4</sup><br>6   | 5                     | 4 <sup>3</sup><br>6 4 | 6                     | 9                       |
| 5                     | 1 <sup>2 3</sup><br>9 | 1 <sup>3</sup><br>6 9   | 1 <sup>3</sup><br>4 9 | 8                     | 4 <sup>3</sup><br>6 9 | 7                     | 1 <sup>2</sup><br>4 6 | 1 <sup>2 3</sup><br>6   |
| 4 <sup>9</sup>        | 7                     | 8                       | 6                     | 4 <sup>2</sup><br>5 9 | 4 <sup>2</sup><br>9   | 1                     | 3                     | 2 <sup>5</sup>          |
| 2                     | 1 <sup>3</sup><br>5 9 | 1 <sup>3</sup><br>5 9   | 8                     | 1 <sup>4</sup><br>5 9 | 4 <sup>7</sup><br>9   | 4 <sup>5 6</sup><br>9 | 4 <sup>5 6</sup><br>9 | 5 <sup>6</sup><br>7     |
| 1 <sup>4</sup><br>9   | 6                     | 1 <sup>5</sup><br>9     | 1 <sup>4</sup><br>5 9 | 3                     | 4 <sup>2</sup><br>7 9 | 2 <sup>4</sup><br>5 9 | 8                     | 2 <sup>5</sup><br>7     |

|                       |                           |                       |                       |                       |                         |                |                         |                     |
|-----------------------|---------------------------|-----------------------|-----------------------|-----------------------|-------------------------|----------------|-------------------------|---------------------|
| 2 <sup>5</sup><br>7 8 | 2 <sup>3</sup><br>5       | 3 <sup>5</sup><br>7   | 4 <sup>2</sup><br>7 9 | 2 <sup>4</sup><br>5 7 | 1                       | 4 <sup>8</sup> | 2 <sup>3</sup><br>5 6 9 | 2 <sup>5</sup><br>6 |
| 9                     | 2 <sup>3</sup><br>5       | 4                     | 6                     | 8                     | 2 <sup>5</sup><br>7     | 2 <sup>5</sup> | 2 <sup>3</sup><br>5     | 1                   |
| 1 <sup>2</sup><br>5 8 | 1 <sup>2</sup><br>5       | 6                     | 4 <sup>2</sup><br>9   | 3                     | 4 <sup>2</sup><br>5     | 4 <sup>8</sup> | 2 <sup>5</sup><br>9     | 7                   |
| 1 <sup>5</sup><br>7   | 1 <sup>3</sup><br>5 7     | 1 <sup>3</sup><br>5 9 | 2 <sup>3</sup><br>4 7 | 1 <sup>2</sup><br>4 7 | 8                       | 6              | 1 <sup>2</sup><br>5     | 2 <sup>5</sup>      |
| 6                     | 1 <sup>3</sup><br>5 8     | 1 <sup>3</sup><br>5 8 | 2 <sup>3</sup>        | 1 <sup>2</sup>        | 9                       | 7              | 1 <sup>2</sup><br>5     | 4                   |
| 4                     | 1 <sup>7</sup>            | 2                     | 5                     | 1 <sup>6</sup><br>7   | 6 <sup>6</sup><br>7     | 9              | 8                       | 3                   |
| 1 <sup>2</sup><br>5 7 | 1 <sup>2</sup><br>5 6     | 1 <sup>5</sup><br>7   | 8                     | 2 <sup>5</sup><br>6 7 | 2 <sup>3</sup><br>5 6   | 1 <sup>3</sup> | 4                       | 9                   |
| 3                     | 4 <sup>7</sup><br>8       | 7 <sup>8</sup>        | 1                     | 9                     | 4 <sup>7</sup>          | 2 <sup>5</sup> | 2 <sup>5</sup><br>6     | 2 <sup>5</sup><br>6 |
| 1 <sup>2</sup><br>5   | 1 <sup>2</sup><br>4 5 6 9 | 1 <sup>5</sup><br>9   | 4 <sup>2</sup>        | 2 <sup>4</sup><br>5 6 | 2 <sup>3</sup><br>4 5 6 | 1 <sup>3</sup> | 7                       | 8                   |

|                       |                         |                  |                       |                           |                           |                       |                         |                     |
|-----------------------|-------------------------|------------------|-----------------------|---------------------------|---------------------------|-----------------------|-------------------------|---------------------|
| 1 <sup>3</sup><br>7 9 | 1 <sup>2 3</sup><br>5 9 | 2 <sup>7</sup>   | 2 <sup>3</sup><br>4 5 | 1 <sup>2 3</sup><br>4 6 9 | 1 <sup>2</sup><br>4 5 6 9 | 4 <sup>3</sup><br>7   | 8                       | 5 <sup>3</sup><br>7 |
| 1 <sup>3</sup><br>9   | 1 <sup>3</sup><br>5 9   | 6                | 7                     | 8                         | 1 <sup>4</sup><br>5 9     | 2 <sup>4</sup><br>9   | 5 <sup>3</sup>          |                     |
| 3 <sup>7 8 9</sup>    | 2 <sup>3</sup><br>5     | 4                | 2 <sup>3</sup><br>5   | 2 <sup>3</sup><br>9       | 2 <sup>5</sup><br>9       | 6                     | 7 <sup>9</sup>          | 1                   |
| 2                     | 6                       | 5                | 4 <sup>8</sup>        | 4 <sup>7</sup><br>9       | 4 <sup>7 8 9</sup>        | 1                     | 3                       | 7 <sup>8</sup>      |
| 1 <sup>3</sup>        | 1 <sup>3</sup><br>7 8   |                  | 2 <sup>5</sup><br>8   | 2 <sup>6</sup><br>7       | 2 <sup>5 6</sup><br>7 8   | 4 <sup>7</sup><br>8   | 4 <sup>2</sup><br>7     | 9                   |
| 4 <sup>7 8</sup>      | 4 <sup>7 8</sup>        | 9                | 1                     | 2 <sup>7</sup>            | 3 <sup>5</sup><br>7 8     | 2 <sup>5</sup><br>7   | 6                       |                     |
| 6                     | 2 <sup>7 8</sup>        | 1                | 9                     | 2 <sup>3</sup><br>7       | 2 <sup>7 8</sup>          | 5 <sup>3</sup><br>7 8 | 5 <sup>7</sup>          | 4                   |
| 5                     | 4 <sup>2</sup><br>7 8 9 | 2 <sup>7 8</sup> | 2 <sup>3</sup><br>4 8 | 1 <sup>2 3</sup><br>4 7   | 1 <sup>2</sup><br>4 7 8   | 3 <sup>7 8 9</sup>    | 6 <sup>2 3</sup><br>7 8 |                     |
| 4 <sup>7 8 9</sup>    | 4 <sup>2</sup><br>7 8 9 | 3                | 6                     | 5                         | 4 <sup>2</sup><br>7 8     |                       | 1 <sup>2</sup><br>7 8   |                     |

|                     |                       |                       |                         |                         |                         |                           |                       |                       |
|---------------------|-----------------------|-----------------------|-------------------------|-------------------------|-------------------------|---------------------------|-----------------------|-----------------------|
| 5                   | 1 <sup>2</sup><br>4   | 1 <sup>4</sup>        | 3                       | 9                       | 1 <sup>4</sup><br>7 6   | 1 <sup>2</sup><br>6 7     | 8                     | 1 <sup>2</sup><br>6   |
| 4 <sup>3</sup><br>6 | 1 <sup>2 3</sup>      | 8                     | 1 <sup>4</sup><br>5 6 7 | 1 <sup>4</sup><br>5 7   | 1 <sup>4</sup><br>5 6 7 | 1 <sup>2 3</sup><br>5 6 4 | 3 <sup>6</sup>        | 9                     |
| 4 <sup>3</sup><br>6 | 7                     | 9                     | 1 <sup>4</sup><br>5 6   | 2                       | 8                       | 1 <sup>3</sup><br>5 6 4   | 3 <sup>1</sup><br>6 5 | 3 <sup>5 6</sup>      |
| 1                   | 5 <sup>6</sup><br>4   | 2 <sup>3</sup><br>4   | 4 <sup>5</sup><br>8     | 4 <sup>5</sup><br>8     | 4 <sup>5</sup>          | 9                         | 7                     | 4 <sup>3</sup><br>8 6 |
| 9                   | 5 <sup>6</sup><br>4 7 | 4 <sup>7</sup>        | 1 <sup>4</sup><br>5 7 8 | 3 <sup>1</sup><br>4 5 7 | 1 <sup>6</sup><br>8     | 2                         | 1 <sup>4</sup><br>8   | 6                     |
| 4 <sup>3</sup><br>7 | 8                     | 4 <sup>2 3</sup><br>7 | 1 <sup>2</sup><br>4 7   | 6                       | 9                       | 1 <sup>3</sup>            | 5                     | 1 <sup>3</sup><br>4   |
| 8                   | 1 <sup>3</sup><br>7   | 1 <sup>3</sup>        | 4 <sup>6</sup><br>7 9   | 4 <sup>7</sup>          | 2                       | 3 <sup>5 6</sup><br>9     | 3 <sup>6</sup><br>9   | 3 <sup>5 6</sup>      |
| 3 <sup>7</sup>      | 4                     | 6                     | 1 <sup>5</sup><br>7 9   | 1 <sup>5</sup><br>7     | 1 <sup>5</sup><br>7     | 2 <sup>8</sup>            | 1 <sup>3</sup><br>9   | 2 <sup>8</sup>        |
| 2                   | 9                     | 5                     | 1 <sup>6</sup><br>8     | 1 <sup>8</sup>          | 1 <sup>3</sup><br>6     | 4                         | 1 <sup>3</sup><br>6   | 7                     |

|                     |                         |                         |                       |                         |                         |                     |                       |                       |
|---------------------|-------------------------|-------------------------|-----------------------|-------------------------|-------------------------|---------------------|-----------------------|-----------------------|
| 5                   | 4 <sup>7</sup><br>8     | 3 <sup>4</sup><br>7     | 1 <sup>2</sup><br>7 8 | 1 <sup>2</sup><br>8     | 2 <sup>4</sup><br>7     | 6                   | 9                     | 2 <sup>3</sup><br>4   |
| 2                   | 1 <sup>4</sup><br>9     | 3 <sup>9</sup>          | 5 <sup>8</sup>        | 5 <sup>8 9</sup>        | 6                       | 7                   | 3 <sup>8</sup>        | 4 <sup>3</sup><br>5 3 |
| 4 <sup>7 8</sup>    | 4 <sup>7 8 9</sup>      | 6                       | 3                     | 2 <sup>5</sup><br>8 9   | 2 <sup>4</sup><br>5 7 9 | 1 <sup>2</sup><br>8 | 1 <sup>4</sup><br>8   | 2 <sup>4</sup><br>5   |
| 4 <sup>3</sup><br>7 | 4 <sup>2 3</sup><br>6 7 | 4 <sup>2 3</sup><br>6 7 | 2 <sup>6</sup><br>8   | 2 <sup>4</sup><br>6 8   | 1                       | 2 <sup>8</sup>      | 5                     | 9                     |
| 9                   | 2 <sup>4</sup><br>5 6   | 2 <sup>4</sup><br>5     | 2 <sup>5 6</sup><br>8 | 2 <sup>4</sup><br>5 6   | 3                       | 1 <sup>2</sup><br>8 | 1 <sup>7 8</sup><br>7 | 2                     |
| 1 <sup>8</sup>      | 2 <sup>5</sup><br>8     | 1 <sup>2</sup><br>5     | 9                     | 7                       | 2 <sup>5</sup>          | 3                   | 4                     | 6                     |
| 4 <sup>6</sup><br>7 | 4 <sup>5 6</sup><br>7 9 | 8                       | 2 <sup>5</sup><br>7   | 3 <sup>5</sup><br>7 9   | 4 <sup>6</sup><br>9 7   |                     | 6                     | 1                     |
| 1 <sup>4</sup><br>7 | 2 <sup>4</sup><br>5 6 7 | 1 <sup>2</sup><br>4 5 9 | 1 <sup>2</sup><br>5 6 | 1 <sup>2</sup><br>5 6 9 | 8                       | 4 <sup>9</sup><br>7 | 3 <sup>6</sup><br>7   | 3                     |
| 1 <sup>3</sup><br>7 | 3 <sup>6</sup><br>9     | 3 <sup>1</sup><br>7     | 4                     | 1 <sup>6</sup><br>9 7   |                         | 5                   | 2                     | 8                     |

|                       |                         |                     |                           |                       |                       |                         |                         |                           |
|-----------------------|-------------------------|---------------------|---------------------------|-----------------------|-----------------------|-------------------------|-------------------------|---------------------------|
| 1 <sup>3</sup><br>4 7 | 9                       | 2                   | 1 <sup>3</sup><br>4 7     | 6                     | 4 <sup>7</sup>        | 5                       | 1 <sup>7</sup><br>8     | 1 <sup>7</sup><br>8       |
| 8                     | 1 <sup>3</sup><br>7     | 1 <sup>3</sup><br>7 | 1 <sup>2 3</sup><br>7     | 2 <sup>3</sup>        | 5                     | 4                       | 9                       | 6                         |
| 1 <sup>4</sup><br>5 7 | 1 <sup>4</sup><br>5     | 6                   | 1 <sup>4</sup><br>7       | 9                     | 8                     | 3                       | 2                       | 1 <sup>7</sup>            |
| 4 <sup>2 3</sup><br>9 | 4 <sup>2 3</sup><br>6   | 5                   | 4 <sup>2 3</sup><br>7 8   | 2 <sup>3</sup><br>7 8 | 1                     | 6                       | 4 <sup>7</sup><br>8     | 4 <sup>7 8 9</sup>        |
| 1 <sup>2</sup><br>4   | 7                       | 8                   | 6                         | 2 <sup>5</sup><br>4 9 | 2 <sup>4</sup><br>9   | 1 <sup>2</sup><br>7 8 9 | 1 <sup>4</sup><br>5     | 3                         |
| 6                     | 1 <sup>2 3</sup><br>4   | 1 <sup>3</sup><br>4 | 2 <sup>3</sup><br>4 5 7 8 | 2 <sup>3</sup><br>5 7 | 2 <sup>4</sup><br>7 9 | 1 <sup>2</sup><br>7 8 9 | 1 <sup>4</sup><br>5 7 8 | 1 <sup>4</sup><br>5 7 8 9 |
| 1 <sup>2 3</sup><br>7 | 1 <sup>2 3</sup><br>5 8 | 9                   | 2 <sup>5</sup><br>7 8     | 4 <sup>7</sup>        | 2 <sup>1</sup><br>7   | 6                       | 1 <sup>5</sup><br>7 8   |                           |
| 4 <sup>5</sup><br>7   | 6                       | 4 <sup>7</sup>      | 5 <sup>7 8 9</sup>        | 1                     | 3                     | 7 <sup>8 9</sup><br>7 8 | 4 <sup>5</sup><br>7 8   | 2                         |
| 1 <sup>2</sup><br>4 5 | 1 <sup>2</sup><br>4 5   | 1 <sup>4</sup>      | 2 <sup>5</sup><br>7 8 9   | 2 <sup>5</sup><br>7 8 | 6                     | 1 <sup>7 8 9</sup>      | 3 <sup>4</sup><br>5 7 8 | 1 <sup>4</sup><br>5 7 8 9 |

|             |            |              |            |            |              |            |                |
|-------------|------------|--------------|------------|------------|--------------|------------|----------------|
| 1 2 3<br>7  | 5<br>4 7   | 1 2 3<br>4 7 | 3<br>7     | 2<br>4 8 9 | 2<br>4 7 8 9 | 4 3<br>7 9 | 6<br>4 7       |
| 8           | 6          | 4<br>7       | 3<br>7 5   | 4 5<br>9   | 1<br>4 5 9   | 2<br>7 3   | 4 5<br>7       |
| 9           | 2 3<br>4 7 | 2 3<br>4 7   | 6          | 2<br>4 5   | 2<br>4 7     | 4 5<br>7   | 8 1            |
| 2<br>5<br>7 | 1<br>4 8 9 |              | 3<br>8 9   | 4<br>8 9   | 2<br>5 7     | 5<br>7     | 6              |
| 6           | 3<br>7 9   | 5<br>7 9     | 2          | 1<br>5 9   | 7 9          | 1<br>5 7   | 4 8            |
| 2<br>5<br>7 | 2<br>4 7 8 | 2<br>4 5 7 8 | 5<br>7     | 1<br>4 5 8 | 6            | 1 2<br>5 7 | 3 9            |
| 1 2 3<br>7  | 2 3<br>7 9 | 1 2 3<br>7 9 | 1<br>4 9   | 6          | 5            | 8          | 1<br>4 7 2 3   |
| 4           | 3<br>7 8 9 | 1<br>7 8 9   | 5<br>8 9   | 3<br>8 9   | 2<br>8 9     | 6          | 1<br>7 5 9 7 3 |
| 1 2<br>5    | 2<br>8 9   | 6            | 1<br>4 8 9 | 7          | 3            | 4 5<br>5 9 | 2<br>4 5       |

|            |            |              |            |              |            |              |                  |
|------------|------------|--------------|------------|--------------|------------|--------------|------------------|
| 1 3<br>4 8 | 2<br>4 6   | 3<br>7 8     | 1<br>4 8   | 1<br>4 7 9   | 5<br>7 8 9 | 1<br>7 8 9   | 6<br>7 8 9       |
| 1<br>5 8   | 5<br>7 8   | 5<br>8       | 2<br>5 7 8 | 6<br>7 9     | 3          | 4            | 1 2<br>7 8 9     |
| 9          | 5 6<br>7 8 | 4 6          | 3          | 1 2<br>4 5 8 | 1 2<br>4 7 | 1 2<br>7 8 6 | 2<br>7 8 1 2 6   |
| 2          | 1<br>4 6   | 3<br>5 6 7 8 | 4 5<br>8   | 4<br>5 8     | 3<br>4 7   | 7 8 9        | 5<br>7 8 9 5 3   |
| 5<br>8     | 5<br>8     | 9            | 1          | 2<br>5 8     | 2 3<br>7   | 2<br>7 8     | 6 4              |
| 4 5<br>8   | 5 6<br>8   | 7            | 2<br>5 6 8 | 9            | 2 3<br>4 6 | 2<br>8       | 1<br>2 3 5 8     |
| 5 6        | 3          | 1            | 4          | 7            | 8          | 2<br>6 9     | 2<br>5 9 2 5 6 9 |
| 7 8        | 6          | 4            | 2          | 9            | 3          | 5            | 1<br>7 8 6 1 6   |
| 5<br>7 8   | 9          | 5<br>8       | 2<br>6     | 1 2          | 1 2<br>6   | 4            | 3<br>5 7 8       |

|              |            |            |          |            |          |            |          |                |
|--------------|------------|------------|----------|------------|----------|------------|----------|----------------|
| 1 2<br>7     | 1<br>5 6 7 | 8          | 4        | 1<br>9     | 1 2<br>9 | 1 2<br>5 6 | 2 3<br>6 | 1 2 3<br>5 6   |
| 1 2 3        | 1<br>3     | 9          | 5        | 6          | 1 2      | 7          | 8        | 4              |
| 1 2<br>4     | 1<br>4 5 6 | 2<br>4 5 6 | 7        | 3          | 8        | 9          | 2<br>6   | 1 2<br>5 6     |
| 1 2 3<br>4   | 9          | 4 5<br>2 3 | 3<br>8 6 | 2<br>4 5 8 | 7        | 1 2<br>8 6 | 2 3<br>6 | 1 2 3<br>6     |
| 6            | 4 5<br>7 8 | 3<br>4 5   | 1        | 2<br>4 5 8 | 4 5      | 3<br>8     | 9        | 2 3<br>7 8     |
| 1 2 3<br>7 8 | 1<br>7 8   | 3<br>2 3   | 9        | 2<br>8     | 3<br>6   | 4          | 5        | 1 2 3<br>6 7 8 |
| 5            | 3<br>8 6   | 7          | 3<br>8 6 | 1<br>9     | 1<br>9   | 2<br>8 6   | 4        | 2<br>8 6       |
| 4<br>8       | 3<br>2 4 6 | 2<br>4 6   | 3<br>8 6 | 7          | 4 5 6    | 5 6<br>8   | 1        | 9              |
| 9            | 4<br>8 6   | 1          | 2        | 4 5<br>8   | 4 5 6    | 3          | 7        | 5 6<br>8       |

|        |        |        |   |            |            |   |            |          |
|--------|--------|--------|---|------------|------------|---|------------|----------|
| 1      | 5      | 7      | 2 | 6<br>8 9   | 3<br>8 9   | 4 | 3<br>6 9   | 3<br>6 9 |
| 4<br>9 | 8      | 6      | 1 | 4<br>7 9   | 4<br>7 9   | 5 | 2          | 3<br>9   |
| 4<br>9 | 2      | 3      |   | 5          | 4 6<br>8 9 | 1 | 6<br>8     | 7        |
| 3<br>7 | 6      | 2      |   | 1<br>8 9   | 1<br>4     |   | 3<br>8 9 7 | 5        |
| 8      | 1      | 4<br>9 | 3 | 7<br>9     | 5          | 2 | 6 4<br>7 6 | 6        |
| 5      | 3<br>7 | 4<br>9 | 6 | 2          | 7 8 9      | 1 | 4<br>3     |          |
| 7<br>3 | 7<br>3 | 1      | 4 | 8 9<br>1 6 | 8 9<br>1 6 | 6 | 5          | 2        |
| 2      | 9      | 5      | 7 | 1<br>6     | 1<br>6     | 3 | 4          | 8        |
| 6      | 4      | 8      | 5 | 3          | 2          | 7 | 9          | 1        |

|        |          |          |              |              |              |          |          |            |
|--------|----------|----------|--------------|--------------|--------------|----------|----------|------------|
| 9      | 4<br>6 7 | 2        | 4<br>6       | 8            | 2 3<br>7     | 2 3      | 5        | 1          |
| 1<br>8 | 3<br>4 6 | 2<br>5 7 | 1<br>4 5 6   | 2 3<br>4 5 6 | 1 2 3<br>5 7 | 2 3      |          | 2<br>6 8 9 |
| 1<br>8 | 3<br>6   | 2<br>5   | 1<br>5 6     | 2 3<br>5 6   | 9            | 4        | 7        | 2<br>6 8   |
| 4      | 2<br>5   | 9        | 1<br>5       | 2 3<br>5     | 1 2 3<br>5 8 | 7        | 6        | 2<br>5 8   |
| 6      | 2<br>7   | 1        | 4 5<br>9 7   | 2<br>4 5 7   | 2<br>5 7 8   | 2<br>5 8 | 4<br>8 9 | 3          |
| 3      | 2<br>7   | 8        | 4 5 6<br>9 7 | 2<br>4 5 6 7 | 2<br>5 7     | 1        | 4<br>9   | 2<br>5 9   |
| 2      | 8        | 3<br>6   | 7            | 5<br>9       | 5<br>3       | 6<br>9   | 1        | 4          |
| 7      | 9        | 4        | 2            | 1            | 6            | 5<br>8   | 3        | 5<br>8     |
| 5      | 1        | 3<br>6   | 8            | 3<br>9       | 4            | 6<br>9   | 2        | 7          |

|              |              |              |                |          |              |            |            |              |
|--------------|--------------|--------------|----------------|----------|--------------|------------|------------|--------------|
| 1 2<br>7 9   | 1 2 3<br>6 7 | 1 2 3<br>7 9 | 2<br>6         | 5        | 8            | 4          | 1<br>3 1 6 |              |
| 8            | 1<br>6       | 4            | 7              | 3        | 1<br>6       | 5<br>9     | 5<br>9     | 2            |
| 1 2<br>6     | 5            | 1 2 3        | 2<br>4 6       | 9        | 1 2<br>4 6   | 7          | 1<br>3 1 6 | 8            |
| 3            | 1 2<br>8     | 5            | 4<br>8         | 7        | 2<br>4 9     | 1 2<br>9   | 6          | 1<br>4 8     |
| 2<br>7       | 4            | 6            | 2 3<br>5 8     | 1        | 2 3<br>5 9   | 2 3<br>5 9 | 5<br>8 9   | 5<br>7 8     |
| 1 2<br>7     | 9            | 1 2<br>7 8   | 2 3<br>4 5 6 8 | 2<br>4 6 | 2 3<br>4 5 6 | 1 2 3<br>5 | 1<br>4 5 8 | 1<br>4 5 7 8 |
| 1 2<br>7 9   | 1 2 3<br>7   | 1 2 3<br>7 9 | 2 3<br>5       | 8        | 2<br>5 7     | 6          | 1<br>4 5   | 1<br>4 5     |
| 1 2<br>4 5 6 | 1 2<br>8 6   | 1 2<br>8     | 9              | 2<br>4 6 | 2<br>4 5 6   | 1<br>5 8   | 7          | 3            |
| 4 5 6<br>7   | 3<br>7 8     | 3<br>7 8     | 1              | 4<br>6 7 | 4 5 6<br>7   | 5<br>8     | 2          | 9            |

|                                 |                               |                                 |                             |                               |                               |                                 |                                 |                               |
|---------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|
| 9                               | 6                             | <sup>1 2</sup> <sub>7 5</sub>   | <sup>2 3</sup> <sub>5</sub> | <sup>1 3</sup> <sub>5</sub>   | <sup>1 3</sup>                | 4                               | <sup>1 2</sup> <sub>7</sub>     | 8                             |
| <sup>1 2 3</sup> <sub>5 8</sub> | <sup>1 2</sup> <sub>5 8</sub> | <sup>1 2 3</sup> <sub>5 8</sub> | 6                           | 4                             | 7                             | <sup>2</sup> <sub>5</sub>       | <sup>1 2</sup> <sub>9</sub>     | <sup>1 2</sup> <sub>9</sub>   |
| <sup>1 2</sup> <sub>5</sub>     | 4                             | <sup>1 2</sup> <sub>5 7</sub>   | <sup>2</sup> <sub>5 9</sub> | 8                             | <sup>1</sup> <sub>9 7</sub>   | <sup>2</sup> <sub>5</sub>       | 6                               | 3                             |
| <sup>2 3</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5 9</sub>   | <sup>2 3</sup> <sub>5 6</sub>   | 1                           | 7                             | 8                             | <sup>2 3</sup> <sub>6</sub>     | <sup>2 3</sup> <sub>9</sub>     | 4                             |
| 4                               | <sup>8 9</sup>                | <sup>3</sup> <sub>6 8</sub>     | <sup>3</sup> <sub>5</sub>   | <sup>3</sup> <sub>5 6 9</sub> | 2                             | 1                               | <sup>3</sup> <sub>7 8 9</sub>   | <sup>6</sup> <sub>7 9</sub>   |
| <sup>1 2 3</sup> <sub>8 6</sub> | 7                             | <sup>1 2 3</sup> <sub>8 6</sub> | 4                           | <sup>3</sup> <sub>6 9</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>2 3</sup> <sub>8 6</sub>   | 5                               | <sup>2</sup> <sub>6 9</sub>   |
| 7                               | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>6 8</sub>     | <sup>3</sup> <sub>8 9</sub> | 2                             | <sup>1</sup> <sub>3 6 9</sub> | <sup>3</sup> <sub>6 8</sub>     | 4                               | 5                             |
| <sup>1 2</sup> <sub>5 6 8</sub> | <sup>1 2</sup> <sub>5 8</sub> | 9                               | <sup>3</sup> <sub>7 8</sub> | <sup>1</sup> <sub>3 6</sub>   | 4                             | <sup>2 3</sup> <sub>7 8 6</sub> | <sup>1 2 3</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub>6</sub>   |
| <sup>1 2</sup> <sub>8 6</sub>   | 3                             | 4                               | <sup>7 8</sup>              | <sup>1</sup> <sub>6</sub>     | 5                             | 9                               | <sup>1 2</sup> <sub>7 8</sub>   | <sup>1 2</sup> <sub>6 7</sub> |

|                               |                             |                               |                                 |                                 |                                 |                                 |                               |                               |
|-------------------------------|-----------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|
| <sup>1</sup> <sub>9</sub>     | 8                           | <sup>6</sup> <sub>9 7</sub>   | <sup>3 1</sup> <sub>5 6 7</sub> | <sup>3</sup> <sub>5 6</sub>     | 4                               | <sup>1</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>6 9</sub>   | <sup>1</sup> <sub>3 6 9</sub> |
| 3                             | 5                           | <sup>2</sup> <sub>4 6</sub>   | <sup>2</sup> <sub>6 7</sub>     | 9                               | <sup>1 2</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>4 7 8</sub>   | <sup>6 4</sup> <sub>6 8</sub> | <sup>1</sup> <sub>6 8</sub>   |
| 7                             | <sup>1</sup> <sub>4 6</sub> | <sup>2</sup> <sub>4 6 9</sub> | <sup>2 3</sup> <sub>6 8</sub>   | <sup>1 2 3</sup> <sub>6 8</sub> | <sup>1 2</sup> <sub>8</sub>     | <sup>1</sup> <sub>4 8 9</sub>   | <sup>3</sup> <sub>6 9</sub>   | 5                             |
| <sup>1 2</sup> <sub>4 5</sub> | <sup>1</sup> <sub>4 6</sub> | 8                             | <sup>2</sup> <sub>5 6 9</sub>   | <sup>1 2</sup> <sub>5 6</sub>   | 3                               | <sup>4 5 6</sup> <sub>9</sub>   | <sup>4 5 6</sup> <sub>9</sub> | 7                             |
| <sup>1 2</sup> <sub>5</sub>   | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>6 7</sub>   | <sup>3</sup> <sub>5 6</sub>     | 4                               | <sup>1 2</sup> <sub>5 6 7</sub> | <sup>1 2</sup> <sub>9</sub>     | <sup>3</sup> <sub>5 6 9</sub> | <sup>3</sup> <sub>6 9</sub>   |
| 4                             | 5                           | 9                             | <sup>3</sup> <sub>4 5 6 7</sub> | <sup>5 6</sup> <sub>7 8</sub>   | <sup>5 6</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>4 5 6</sub>   | 1                             | 2                             |
| <sup>8 9</sup>                | 2                           | <sup>3</sup> <sub>7 9</sub>   | 1                               | <sup>3</sup> <sub>7</sub>       | 5                               | <sup>3</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>6 9</sub>   | 4                             |
| 6                             | <sup>4</sup> <sub>7</sub>   | 1                             | 8                               | <sup>4</sup> <sub>7</sub>       | <sup>2 3</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>9</sub>       | <sup>2 3</sup> <sub>5 9</sub> | <sup>3</sup> <sub>9</sub>     |
| <sup>4 5</sup> <sub>8 9</sub> | <sup>4</sup> <sub>5 9</sub> | <sup>3</sup> <sub>4 5</sub>   | <sup>2 3</sup> <sub>9</sub>     | <sup>2 3</sup> <sub>4</sub>     | 6                               | <sup>1 2 3</sup> <sub>8 9</sub> | 7                             | <sup>1</sup> <sub>3 8 9</sub> |

|                                 |                               |                             |                                 |                               |                                 |                               |                                 |                             |
|---------------------------------|-------------------------------|-----------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|-----------------------------|
| <sup>2 3</sup> <sub>4 6</sub>   | 7                             | 9                           | <sup>2 3</sup> <sub>5</sub>     | 1                             | <sup>2 3</sup> <sub>4</sub>     | 8                             | <sup>3</sup> <sub>4 5 6</sub>   | <sup>3</sup> <sub>4 5</sub> |
| <sup>2 3</sup> <sub>4 6</sub>   | <sup>3</sup> <sub>4 6</sub>   | 5                           | 8                               | <sup>2</sup> <sub>4 7</sub>   | <sup>2 3</sup> <sub>4 7</sub>   | <sup>6</sup> <sub>7</sub>     | 9                               | 1                           |
| <sup>3</sup> <sub>4</sub>       | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>8</sub>   | <sup>3</sup> <sub>7 9</sub>     | <sup>4 5</sup> <sub>7 9</sub> | 6                               | <sup>5</sup> <sub>7</sub>     | <sup>3</sup> <sub>4 7</sub>     | 2                           |
| <sup>3 1</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>4 9</sub>   | 2                           | <sup>1</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>7 9</sub>     | 8                           |
| <sup>3</sup> <sub>5</sub>       | <sup>1</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>8</sub>   | 4                               | 6                             | <sup>1 2</sup> <sub>7 8 9</sub> | <sup>1 2</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>6 4</sub>   | <sup>3</sup> <sub>5</sub>   |
| 7                               | <sup>1</sup> <sub>4 8 9</sub> | <sup>3</sup> <sub>4 6</sub> | <sup>1 2 3</sup> <sub>9</sub>   | <sup>2</sup> <sub>8 9</sub>   | 5                               | <sup>1 2</sup> <sub>6 9</sub> | <sup>1 2 3</sup> <sub>6 4</sub> | <sup>3</sup> <sub>4</sub>   |
| 8                               | <sup>2</sup> <sub>5 6</sub>   | 3                           | <sup>1 2</sup> <sub>7</sub>     | <sup>2</sup> <sub>5 7</sub>   | <sup>1 2</sup> <sub>7</sub>     | <sup>1 2</sup> <sub>4</sub>   | 9                               |                             |
| 9                               | <sup>2</sup> <sub>4 5</sub>   | 7                           | <sup>1 2</sup> <sub>5</sub>     | 3                             | <sup>1 2</sup> <sub>4</sub>     | <sup>1 2</sup> <sub>8</sub>   | 6                               |                             |
| 1                               | <sup>2</sup> <sub>4 6 4</sub> | <sup>2</sup> <sub>6 4</sub> | <sup>2</sup> <sub>6 4 8 9</sub> | <sup>2</sup> <sub>4 8 9</sub> | <sup>2</sup> <sub>4 8 9</sub>   | 3                             | 5                               | 7                           |

|                               |                                 |                                 |                               |                                 |                                 |                             |                               |                               |
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| <sup>2</sup> <sub>6 7 9</sub> | 4                               | 3                               | <sup>6</sup> <sub>9 7</sub>   | <sup>2</sup> <sub>6 9</sub>     | 1                               | 5                           | 8                             |                               |
| <sup>1</sup> <sub>6 7</sub>   | <sup>5</sup> <sub>7 9</sub>     | 3                               | 8                             | <sup>1</sup> <sub>4 5 6 7</sub> | <sup>1</sup> <sub>4 6 9</sub>   | 2                           | <sup>6 4</sup> <sub>6</sub>   | <sup>6<sub>4 6</sub></sup>    |
| <sup>1 2</sup> <sub>6</sub>   | <sup>5</sup> <sub>9</sub>       | 8                               | <sup>2</sup> <sub>4 6 9</sub> | <sup>1</sup> <sub>4 5 6 9</sub> | <sup>1 2</sup> <sub>4 6 9</sub> | 7                           | <sup>3</sup> <sub>6 4</sub>   | <sup>3</sup> <sub>6 6</sub>   |
| <sup>3</sup> <sub>4</sub>     | <sup>1 2 3</sup> <sub>4 6</sub> | <sup>1 2</sup> <sub>6 9</sub>   | 5                             | <sup>1</sup> <sub>4 8 9</sub>   | <sup>1</sup> <sub>4 8 9</sub>   | <sup>3</sup> <sub>8 9</sub> | <sup>2</sup> <sub>7</sub>     | <sup>2 3</sup> <sub>6</sub>   |
| 8                             | <sup>1 2</sup> <sub>6</sub>     | <sup>1 2</sup> <sub>5 6 9</sub> | 7                             | 3                               | <sup>1</sup> <sub>6 9</sub>     | <sup>5</sup> <sub>9</sub>   | 4                             | <sup>2</sup> <sub>5 6</sub>   |
| 7                             | <sup>3</sup> <sub>4 6</sub>     | <sup>5 6</sup> <sub>4 9</sub>   | 2                             | <sup>4</sup> <sub>6 8 9</sub>   | <sup>5</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>6</sub>   | 1                             |                               |
| <sup>3</sup> <sub>4</sub>     | 8                               | <sup>1 2</sup> <sub>9</sub>     | <sup>4</sup> <sub>9</sub>     | 7                               | 5                               | <sup>1 2</sup> <sub>6</sub> | <sup>3</sup> <sub>9</sub>     |                               |
| 9                             | <sup>2 3</sup> <sub>4 6 7</sub> | <sup>2</sup> <sub>6</sub>       | 1                             | <sup>2 3</sup> <sub>4 6</sub>   | <sup>2 3</sup> <sub>5 6</sub>   | <sup>5</sup> <sub>8</sub>   | <sup>2 3</sup> <sub>7 5</sub> | <sup>2 3</sup> <sub>5</sub>   |
| 5                             | <sup>1 2 3</sup> <sub>6 7</sub> | <sup>1 2</sup> <sub>6</sub>     | <sup>2</sup> <sub>6 8 9</sub> | <sup>2 3</sup> <sub>6 8 9</sub> | <sup>2 3</sup> <sub>6 8 9</sub> | 4                           | <sup>1 2</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>7 9</sub> |

|                               |                           |                                 |                             |                               |                               |                               |   |                               |
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| <sup>1</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>7</sub> | <sup>3</sup> <sub>6 7 8 9</sub> | 4                           | <sup>6</sup> <sub>8</sub>     | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>6 9</sub>   | 2 | 5                             |
| <sup>3</sup> <sub>5 9</sub>   | 4                         | <sup>5 6</sup> <sub>9</sub>     | 7                           | 2                             | 1                             | <sup>6</sup> <sub>9</sub>     | 8 | <sup>3</sup> <sub>6 9</sub>   |
| <sup>1</sup> <sub>8</sub>     | 2                         | <sup>1</sup> <sub>6 8</sub>     | <sup>3</sup> <sub>5 8</sub> | 9                             | <sup>3</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>4 6</sub>   | 7 | <sup>1</sup> <sub>3 4 6</sub> |
| 7                             | <sup>1</sup> <sub>5</sub> | <sup>2</sup> <sub>9</sub>       | <sup>5</sup> <sub>8 9</sub> | <sup>1</sup> <sub>4 5 8</sub> | <sup>2</sup> <sub>4 5</sub>   | 3                             | 6 | <sup>2</sup> <sub>8 9</sub>   |
| 6                             | <sup>1</sup> <sub>5</sub> | 3                               | <sup>5</sup> <sub>8 9</sub> | <sup>1</sup> <sub>5 8</sub>   | <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>7 9</sub>   | 4 | <sup>2</sup> <sub>7 8 9</sub> |
| <sup>2</sup> <sub>9</sub>     | 8                         | 4                               | <sup>6</sup> <sub>9</sub>   | 3                             | 7                             | <sup>1 2</sup> <sub>9</sub>   | 5 | <sup>1 2</sup> <sub>9</sub>   |
| <sup>3</sup> <sub>5 8</sub>   | 9                         | <sup>5 6</sup> <sub>7 8</sub>   | 2                           | <sup>4 5 6</sup> <sub>7</sub> | <sup>4 5 6</sup> <sub>7</sub> | <sup>5 6</sup> <sub>7</sub>   | 1 | <sup>6</sup> <sub>7</sub>     |
| 4                             | <sup>6</sup> <sub>7</sub> | <sup>2</sup> <sub>5 6 7</sub>   | 1                           | <sup>5 6</sup>                | 9                             | 8                             | 3 | <sup>2</sup> <sub>6 7</sub>   |
| <sup>1 2 3</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | <sup>1 2</sup> <sub>5 6</sub>   | <sup>3</sup> <sub>5</sub>   | 7                             | 8                             | <sup>2</sup> <sub>4 5 6</sub> | 9 | <sup>2</sup> <sub>4 6</sub>   |

|                             |                               |                                 |                               |                                 |                             |                               |                               |                               |
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| 8                           | 7                             | <sup>2</sup> <sub>9</sub>       | <sup>4 5</sup> <sub>9</sub>   | <sup>1</sup> <sub>4 5</sub>     | <sup>1</sup> <sub>5</sub>   | <sup>3</sup> <sub>6 9</sub>   | <sup>2</sup> <sub>6 9</sub>   | <sup>2 3</sup> <sub>6 9</sub> |
| <sup>4</sup> <sub>9</sub>   | <sup>2</sup> <sub>4 9</sub>   | 5                               | 3                             | <sup>7 8</sup>                  | 6                           | <sup>7</sup> <sub>9</sub>     | <sup>2</sup> <sub>8 9</sub>   | 1                             |
| <sup>1</sup> <sub>3 1</sub> | <sup>3</sup> <sub>1</sub>     | 6                               | 2                             | <sup>7 8</sup>                  | 9                           | <sup>5</sup> <sub>7</sub>     | <sup>5</sup> <sub>8</sub>     | 4                             |
| 6                           | 8                             | <sup>2 3</sup> <sub>4 5 7</sub> | <sup>2 3</sup> <sub>4 5</sub> | <sup>2 3</sup> <sub>5 7</sub>   | <sup>1</sup> <sub>5 9</sub> | <sup>3</sup> <sub>1 5 9</sub> | <sup>1 2</sup> <sub>5 9</sub> | <sup>2 3</sup> <sub>9</sub>   |
| 7                           | <sup>2</sup> <sub>5</sub>     | <sup>2 3</sup> <sub>9</sub>     | 1                             | <sup>2 3</sup> <sub>5 6</sub>   | <sup>2 3</sup> <sub>5</sub> | 8                             | 4                             | <sup>2 3</sup> <sub>6 9</sub> |
| <sup>1</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>5</sub>   | <sup>2 3</sup> <sub>4</sub>     | 9                             | <sup>2 3</sup> <sub>4 5 6</sub> | 8                           | <sup>3</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5 6</sub>   | 7                             |
| <sup>3</sup> <sub>9</sub>   | 6                             | 1                               | 8                             | <sup>3</sup> <sub>9</sub>       | 4                           | 2                             | 7                             | 5                             |
| 2                           | <sup>5</sup> <sub>9 7 8</sub> | <sup>1</sup> <sub>5 7</sub>     | <sup>1</sup> <sub>5 7</sub>   | <sup>5 6</sup> <sub>9 7</sub>   | <sup>1</sup> <sub>5</sub>   | 4                             | 3                             | <sup>6</sup> <sub>8 9</sub>   |
| <sup>4 5</sup> <sub>9</sub> | <sup>3</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>7 8</sub>     | <sup>5 6</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>5 9 7</sub> | <sup>2 3</sup> <sub>5</sub> | <sup>1</sup> <sub>6 9</sub>   | <sup>1</sup> <sub>6 9</sub>   | <sup>6</sup> <sub>8 9</sub>   |

|                             |                             |                             |                               |                                 |                               |                               |                               |                               |
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| 8                           | 4                           | <sup>2</sup> <sub>5 6</sub> | <sup>2</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5 6</sub>     | 9                             | 3                             | <sup>5</sup> <sub>7</sub>     | 1                             |
| <sup>1</sup> <sub>5 6</sub> | <sup>3</sup> <sub>5 6</sub> | <sup>5</sup> <sub>7</sub>   | <sup>5</sup> <sub>6</sub>     | 4                               | 8                             | <sup>1</sup> <sub>5 6</sub>   | <sup>3</sup> <sub>7</sub>     | <sup>6</sup> <sub>9</sub>     |
| <sup>1</sup> <sub>5 6</sub> | <sup>3</sup> <sub>5 6</sub> | <sup>2</sup> <sub>5 6</sub> | <sup>1</sup> <sub>2 5 6</sub> | 7                               | <sup>1</sup> <sub>2 3</sub>   | <sup>5</sup> <sub>6</sub>     | 4                             | <sup>6</sup> <sub>8 9</sub>   |
| <sup>2</sup> <sub>5 6</sub> | <sup>5</sup> <sub>7</sub>   | 1                           | <sup>2</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5 6</sub>     | 4                             | <sup>5</sup> <sub>7 8 9</sub> | <sup>2</sup> <sub>5 6</sub>   | 3                             |
| 4                           | 8                           | 3                           | <sup>1</sup> <sub>2 5</sub>   | <sup>1</sup> <sub>2 5</sub>     | 7                             | <sup>1</sup> <sub>5</sub>     | <sup>2</sup> <sub>9</sub>     | <sup>6</sup> <sub>9</sub>     |
| <sup>2</sup> <sub>5 6</sub> | <sup>5</sup> <sub>7</sub>   | 9                           | 3                             | <sup>1</sup> <sub>2 5 6</sub>   | 8                             | <sup>1</sup> <sub>5</sub>     | <sup>1</sup> <sub>2 5</sub>   | 4                             |
| <sup>5</sup> <sub>6 9</sub> | <sup>5</sup> <sub>6 9</sub> | <sup>4</sup> <sub>5 6</sub> | 7                             | <sup>1</sup> <sub>2 4 5 6</sub> | <sup>1</sup> <sub>2 5 6</sub> | <sup>6</sup> <sub>8 9</sub>   | 3                             | <sup>2</sup> <sub>6 8 9</sub> |
| 3                           | 1                           | <sup>4</sup> <sub>7</sub>   | <sup>6</sup> <sub>8</sub>     | 8                               | <sup>4</sup> <sub>6 9</sub>   | <sup>2</sup> <sub>6</sub>     | <sup>6</sup> <sub>7 9</sub>   | 5                             |
| <sup>5</sup> <sub>6 9</sub> | 2                           | <sup>5</sup> <sub>7 8</sub> | <sup>1</sup> <sub>5 6 9</sub> | 3                               | <sup>1</sup> <sub>5 6</sub>   | 4                             | <sup>1</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 8 9</sub> |

|                             |                               |                             |                             |                                 |                             |                             |                             |                               |
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| 7                           | <sup>1</sup> <sub>5 9</sub>   | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>8 9</sub> | <sup>3</sup> <sub>5</sub>       | <sup>1</sup> <sub>8 9</sub> | 4                           | 2                           | <sup>1</sup> <sub>5 8</sub>   |
| 8                           | <sup>1</sup> <sub>5 9</sub>   | <sup>2</sup> <sub>4 9</sub> | <sup>3</sup> <sub>6 9</sub> | <sup>2</sup> <sub>3 4 5 6</sub> | <sup>1</sup> <sub>2 3</sub> | <sup>1</sup> <sub>5 6</sub> | <sup>1</sup> <sub>5</sub>   | 7                             |
| <sup>1</sup> <sub>2</sub>   | <sup>1</sup> <sub>5</sub>     | <sup>2</sup> <sub>4</sub>   | <sup>6</sup> <sub>7 8</sub> | <sup>2</sup> <sub>4 5 6</sub>   | <sup>1</sup> <sub>2</sub>   | 9                           | 3                           | <sup>1</sup> <sub>5 6</sub>   |
| 3                           | <sup>7</sup> <sub>8 9</sub>   | <sup>7</sup> <sub>8 9</sub> | 2                           | 1                               | 5                           | <sup>7</sup> <sub>8</sub>   | 6                           | 4                             |
| 4                           | 2                             | <sup>1</sup> <sub>8</sub>   | <sup>3</sup> <sub>7</sub>   | <sup>3</sup> <sub>6 9</sub>     | <sup>3</sup> <sub>7 9</sub> | <sup>1</sup> <sub>5 8</sub> | <sup>1</sup> <sub>5 8</sub> | <sup>1</sup> <sub>5 9</sub>   |
| 5                           | 6                             | <sup>1</sup> <sub>7</sub>   | 4                           | 8                               | <sup>3</sup> <sub>9</sub>   | 2                           | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>9</sub>     |
| <sup>1</sup> <sub>2</sub>   | <sup>1</sup> <sub>9 7 8</sub> | <sup>2</sup> <sub>7 8</sub> | 5                           | <sup>2</sup> <sub>3 9</sub>     | 6                           | <sup>1</sup> <sub>7 8</sub> | 4                           | <sup>1</sup> <sub>2 3</sub>   |
| <sup>2</sup> <sub>6 9</sub> | <sup>6</sup> <sub>7 8</sub>   | 3                           | 1                           | <sup>2</sup> <sub>9</sub>       | 4                           | <sup>5</sup> <sub>7 8</sub> | <sup>5</sup> <sub>7 8</sub> | <sup>2</sup> <sub>5 6</sub>   |
| <sup>1</sup> <sub>2</sub>   | <sup>6</sup> <sub>4</sub>     | 5                           | <sup>3</sup> <sub>8</sub>   | 7                               | <sup>2</sup> <sub>3 8</sub> | <sup>1</sup> <sub>3 6</sub> | 9                           | <sup>1</sup> <sub>2 3 6</sub> |

|                             |                             |                               |                             |                             |                             |                             |                             |                             |
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| 6                           | 2                           | 1                             | <sup>4</sup> <sub>8 9</sub> | <sup>4</sup> <sub>8 9</sub> | <sup>4</sup> <sub>8</sub>   | 5                           | 7                           | 3                           |
| 9                           | <sup>3</sup> <sub>5 8</sub> | <sup>3</sup> <sub>5 7 8</sub> | <sup>2</sup> <sub>6</sub>   | <sup>2</sup> <sub>3</sub>   | <sup>3</sup> <sub>7</sub>   | <sup>1</sup> <sub>8</sub>   | 4                           | <sup>1</sup> <sub>6</sub>   |
| <sup>4</sup> <sub>7 8</sub> | <sup>3</sup> <sub>8</sub>   | <sup>3</sup> <sub>7 8</sub>   | 5                           | 1                           | <sup>3</sup> <sub>6</sub>   | <sup>2</sup> <sub>6</sub>   | <sup>2</sup> <sub>9</sub>   | <sup>6</sup> <sub>9</sub>   |
| <sup>1</sup> <sub>4 5</sub> | <sup>1</sup> <sub>3 8</sub> | <sup>3</sup> <sub>5 6</sub>   | <sup>4</sup> <sub>8</sub>   | <sup>4</sup> <sub>5 6</sub> | <sup>1</sup> <sub>3 6</sub> | 9                           | <sup>1</sup> <sub>2 3</sub> | 7                           |
| <sup>1</sup> <sub>5 8</sub> | 7                           | <sup>3</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>8</sub>   | <sup>2</sup> <sub>3</sub>   | <sup>5</sup> <sub>8</sub>   | 9                           | 4                           | <sup>1</sup> <sub>2 8</sub> |
| <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>8</sub>   | 9                             | 2                           | <sup>4</sup> <sub>7 8</sub> | <sup>4</sup> <sub>8</sub>   | <sup>3</sup> <sub>7</sub>   | 6                           | 5                           |
| <sup>1</sup> <sub>5 8</sub> | 4                           | <sup>5</sup> <sub>8 9</sub>   | <sup>8</sup> <sub>9</sub>   | 7                           | <sup>2</sup> <sub>5 8</sub> | <sup>1</sup> <sub>2 3</sub> | <sup>1</sup> <sub>2 6</sub> | <sup>1</sup> <sub>2 9</sub> |
| <sup>3</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>7 9</sub>   | 1                           | <sup>4</sup> <sub>9</sub>   | <sup>2</sup> <sub>4</sub>   | <sup>2</sup> <sub>3</sub>   | 8                           | 5                           |
| 2                           | <sup>1</sup> <sub>5 8</sub> | <sup>5</sup> <sub>7 8 9</sub> | 3                           | 6                           | <sup>5</sup> <sub>8</sub>   | <sup>1</sup> <sub>7</sub>   | <sup>1</sup> <sub>9</sub>   | 4                           |

|                           |                           |                             |                             |                             |                               |                               |                               |                             |
|---------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|
| <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>9</sub> | <sup>1</sup> <sub>4 5</sub> | <sup>3</sup> <sub>7 8</sub> | <sup>5</sup> <sub>7</sub>   | 2                             | <sup>4</sup> <sub>5 7</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>4 6</sub> |
| 6                         | <sup>4</sup> <sub>8</sub> | <sup>3</sup> <sub>4 5</sub> | <sup>3</sup> <sub>7 8</sub> | <sup>1</sup> <sub>4 5</sub> | <sup>3</sup> <sub>7 9</sub>   | <sup>4</sup> <sub>5 7</sub>   | <sup>2</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>7</sub>   |
| 2                         | <sup>4</sup> <sub>8</sub> | <sup>1</sup> <sub>4</sub>   | <sup>7</sup> <sub>8</sub>   | <sup>6</sup> <sub>7</sub>   | <sup>4</sup> <sub>7 9</sub>   | <sup>6</sup> <sub>7 8 9</sub> | 3                             | <sup>1</sup> <sub>8 9</sub> |
| <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>4</sub> | <sup>3</sup> <sub>6 8</sub> | <sup>4</sup> <sub>5 8</sub> | 9                           | 1                             | <sup>5</sup> <sub>7</sub>     | <sup>3</sup> <sub>6</sub>     | <sup>2</sup> <sub>7 8</sub> |
| 1                         | 7                         | <sup>5</sup> <sub>9</sub>   | 8                           | <sup>3</sup> <sub>5 6</sub> | 2                             | <sup>5</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>4</sup> <sub>7 8</sub> |
| <sup>3</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | 2                           | 4                           | <sup>5</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>3</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>6</sub>   |
| 7                         | 1                         | <sup>4</sup> <sub>9</sub>   | 2                           | <sup>4</sup> <sub>5 9</sub> | <sup>4</sup> <sub>5 9</sub>   | <sup>4</sup> <sub>5 8 9</sub> | 6                             | <sup>4</sup> <sub>8 9</sub> |
| 8                         | 5                         | <sup>4</sup> <sub>9</sub>   | 3                           | <sup>4</sup> <sub>6 9</sub> | <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>2 4</sub>   | 7                             | <sup>1</sup> <sub>2 4</sub> |
| <sup>4</sup> <sub>9</sub> | <sup>3</sup> <sub>2</sub> | <sup>3</sup> <sub>4 6</sub> | <sup>5</sup> <sub>7</sub>   | <sup>8</sup> <sub>9</sub>   | <sup>1</sup> <sub>4 5 6</sub> | <sup>1</sup> <sub>4 5 9</sub> | <sup>3</sup> <sub>5</sub>     | <sup>1</sup> <sub>3 4</sub> |

|                               |                             |                                 |                             |                             |                             |                             |                             |                               |
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| <sup>1</sup> <sub>5 8</sub>   | 7                           | <sup>5</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>5 6</sub> | <sup>1</sup> <sub>5 6</sub> | <sup>8</sup> <sub>9</sub>   | 4                           | 2                           | <sup>1</sup> <sub>5 6</sub>   |
| <sup>1</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>8 9</sub> | <sup>4</sup> <sub>5 8 9</sub>   | <sup>1</sup> <sub>5 6</sub> | <sup>1</sup> <sub>5 6</sub> | 2                           | <sup>1</sup> <sub>7</sub>   | <sup>1</sup> <sub>5</sub>   | <sup>1</sup> <sub>3 5 6</sub> |
| 2                             | <sup>1</sup> <sub>5</sub>   | 6                               | <sup>1</sup> <sub>5 7</sub> | <sup>3</sup> <sub>4</sub>   | <sup>1</sup> <sub>3</sub>   | 9                           | 8                           |                               |
| <sup>6</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>8 9</sub> | 3                               | <sup>1</sup> <sub>7</sub>   | 2                           | <sup>1</sup> <sub>4 6</sub> | 5                           | <sup>1</sup> <sub>4 7</sub> | <sup>1</sup> <sub>4 6</sub>   |
| <sup>5</sup> <sub>6 7</sub>   | <sup>2</sup> <sub>5 6</sub> | <sup>2</sup> <sub>5</sub>       | <sup>1</sup> <sub>5</sub>   | <sup>3</sup> <sub>8</sub>   | <sup>1</sup> <sub>4 6</sub> | 9                           | <sup>1</sup> <sub>4 7</sub> | <sup>1</sup> <sub>3 4 6</sub> |
| <sup>5</sup> <sub>6 7</sub>   | 4                           | 1                               | 9                           | <sup>5</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>   | <sup>6</sup> <sub>7 8</sub> | <sup>3</sup> <sub>7 8</sub> | 2                             |
| <sup>1</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>8 9</sub> | <sup>4</sup> <sub>5 7 8 9</sub> | 2                           | 3                           | <sup>8</sup> <sub>9</sub>   | 6                           | <sup>4</sup> <sub>5</sub>   |                               |
| <sup>1</sup> <sub>4 5 6</sub> | <sup>1</sup> <sub>2 8</sub> | <sup>2</sup> <sub>4 5 8</sub>   | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>6</sub>   | <sup>6</sup> <sub>7</sub>   | 7                           | 3                           | <sup>4</sup> <sub>5</sub>     |
| <sup>1</sup> <sub>7 8 9</sub> | 3                           | <sup>6</sup> <sub>7 8 9</sub>   | 4                           | <sup>1</sup> <sub>6 9</sub> | 5                           | 2                           | <sup>1</sup> <sub>7 8</sub> | <sup>1</sup> <sub>7</sub>     |

|                               |                               |                               |                                 |                                   |                                 |                             |                               |                               |
|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------------|---------------------------------|-----------------------------|-------------------------------|-------------------------------|
| <sup>1</sup> <sub>7 8 9</sub> | 3                             | <sup>1</sup> <sub>7</sub>     | 4                               | <sup>2</sup> <sub>7 8 9</sub>     | <sup>2</sup> <sub>9</sub>       | <sup>2</sup> <sub>5</sub>   | 6                             | <sup>1</sup> <sub>2 7 8</sub> |
| <sup>7</sup> <sub>8</sub>     | 2                             | 6                             | <sup>5</sup> <sub>7</sub>       | <sup>3</sup> <sub>7 8</sub>       | <sup>5</sup> <sub>9</sub>       | 1                           | 4                             | <sup>3</sup> <sub>7 8</sub>   |
| <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>5</sub>     | 4                             | 6                               | <sup>2</sup> <sub>3 7 8 9</sub>   | <sup>2</sup> <sub>3 9</sub>     | <sup>2</sup> <sub>3 5</sub> | <sup>2</sup> <sub>3</sub>     | <sup>1</sup> <sub>2 3</sub>   |
| 5                             | <sup>7</sup> <sub>9</sub>     | <sup>2</sup> <sub>3</sub>     | <sup>2</sup> <sub>3</sub>       | <sup>2</sup> <sub>3 6 9</sub>     | 4                               | 1                           | <sup>2</sup> <sub>3 7 8</sub> | <sup>2</sup> <sub>3 6</sub>   |
| 6                             | 4                             | <sup>1</sup> <sub>2 3 7</sub> | <sup>1</sup> <sub>2 3</sub>     | <sup>1</sup> <sub>2 3</sub>       | 8                               | 9                           | 5                             | <sup>2</sup> <sub>3 7</sub>   |
| <sup>1</sup> <sub>2</sub>     | <sup>1</sup> <sub>9</sub>     | 8                             | <sup>1</sup> <sub>2 3 5 9</sub> | <sup>1</sup> <sub>2 3 5 6 9</sub> | 7                               | <sup>2</sup> <sub>3 6</sub> | <sup>2</sup> <sub>3</sub>     | 4                             |
| <sup>1</sup> <sub>2</sub>     | <sup>1</sup> <sub>5 6 7</sub> | 9                             | 8                               | <sup>2</sup> <sub>3 7</sub>       | <sup>2</sup> <sub>3 5 6</sub>   | <sup>2</sup> <sub>3 6</sub> | 4                             | <sup>2</sup> <sub>3 6</sub>   |
| 4                             | <sup>5</sup> <sub>7</sub>     | <sup>2</sup> <sub>5</sub>     | <sup>2</sup> <sub>3 7 9</sub>   | <sup>2</sup> <sub>3 9</sub>       | <sup>2</sup> <sub>3 5 6 9</sub> | 8                           | 1                             | <sup>2</sup> <sub>3 7</sub>   |
| 3                             | 8                             | <sup>1</sup> <sub>2 7</sub>   | <sup>1</sup> <sub>2</sub>       | 4                                 | <sup>2</sup> <sub>6 7</sub>     | <sup>2</sup> <sub>6</sub>   | 9                             | 5                             |





|                            |                     |                            |                            |                          |                          |                       |                   |                         |
|----------------------------|---------------------|----------------------------|----------------------------|--------------------------|--------------------------|-----------------------|-------------------|-------------------------|
| <sup>3</sup><br>5<br>8     | 2                   | <sup>5</sup><br>3          | <sup>3</sup><br>8          | 7                        | 1                        | 6                     | 9                 | 4                       |
| 6                          | <sup>3</sup><br>9   | 7                          | 2                          | <sup>4</sup><br>9        | <sup>3</sup><br>4 5      | 8                     | 1                 | <sup>3</sup><br>5       |
| <sup>1</sup><br>4          | <sup>3</sup><br>8 9 | <sup>1</sup><br>4          | <sup>3</sup><br>5 6<br>8 9 | <sup>3</sup><br>6<br>9   | <sup>3</sup><br>5<br>8   | 2                     | <sup>5</sup><br>7 | <sup>3</sup><br>5<br>7  |
| <sup>2</sup> 3<br>8 9      | 7                   | <sup>2</sup> 3<br>6<br>9   | <sup>1</sup> 3<br>8 9      | 5                        | <sup>2</sup> 3<br>8      | <sup>1</sup><br>9     | 4                 | <sup>6</sup><br>8 9     |
| <sup>4</sup> 5<br>8 9      | <sup>3</sup><br>8   | <sup>3</sup><br>4 5<br>9   | <sup>1</sup> 3<br>4<br>9   | <sup>1</sup> 3<br>4<br>9 | 6                        | <sup>1</sup> 5<br>7 9 | 2                 | <sup>5</sup><br>7 8 9   |
| <sup>2</sup><br>4 5<br>8 9 | 1                   | <sup>2</sup><br>4 5 6<br>9 | <sup>4</sup><br>7 8 9      | <sup>2</sup><br>4<br>9   | <sup>2</sup><br>4<br>7 8 | <sup>5</sup><br>7 9   | 3                 | <sup>5</sup> 6<br>7 8 9 |
| <sup>1</sup> 3<br>7 9      | 4                   | <sup>1</sup> 3<br>9        | <sup>1</sup> 3<br>5 6<br>9 | <sup>1</sup> 3<br>6<br>7 | <sup>3</sup><br>5<br>7   | <sup>5</sup><br>7 9   | 8                 | 2                       |
| <sup>1</sup> 2<br>7 9      | 6                   | <sup>1</sup> 2<br>9        | <sup>4</sup> 5<br>7        | 8                        | <sup>4</sup> 5<br>7      | 3                     | <sup>5</sup><br>7 | <sup>5</sup><br>7 9     |
| <sup>2</sup> 3<br>7        | 5                   | 8                          | <sup>3</sup><br>7          | <sup>2</sup> 3           | 9                        | 4                     | 6                 | 1                       |

|                     |                            |                          |                          |                       |                            |                            |                            |                     |
|---------------------|----------------------------|--------------------------|--------------------------|-----------------------|----------------------------|----------------------------|----------------------------|---------------------|
| 9                   | <sup>3</sup><br>7 8        | 1                        | <sup>4</sup><br>6        | <sup>3</sup><br>5 6   | <sup>4</sup> 5<br>3        | 2                          | <sup>6</sup><br>7 8        | <sup>6</sup><br>7 8 |
| 5                   | <sup>2</sup> 3<br>6        | <sup>2</sup> 3<br>6      | 7                        | 8                     | <sup>1</sup> 2 3<br>6      | <sup>1</sup> 3<br>6<br>9   | 4                          | <sup>6</sup><br>9   |
| <sup>3</sup><br>4 6 | <sup>2</sup> 3<br>7 8      | <sup>2</sup> 3<br>6 4    | <sup>1</sup> 3<br>6<br>9 | <sup>1</sup> 2 3<br>6 | <sup>1</sup> 2 3<br>6      | <sup>1</sup> 3<br>6<br>7 8 | <sup>1</sup><br>7 8        | 5                   |
| 7                   | <sup>2</sup><br>5 6<br>9   | <sup>2</sup><br>5 6<br>9 | <sup>1</sup><br>6<br>8   | 4                     | <sup>1</sup> 2<br>8        | <sup>1</sup><br>6<br>8 9   | 3                          | <sup>6</sup><br>8 9 |
| 1                   | <sup>2</sup> 3<br>6        | 8                        | <sup>3</sup><br>7        | <sup>2</sup> 3<br>6   | 9                          | 5                          | <sup>6</sup><br>7          | 4                   |
| <sup>3</sup><br>4 6 | <sup>3</sup><br>6 4        | <sup>3</sup><br>6 9      | 5                        | <sup>1</sup> 3<br>7   | <sup>1</sup> 3<br>6 7 8    | <sup>1</sup><br>7 8 9      | <sup>1</sup><br>6<br>7 8 9 | 2                   |
| <sup>3</sup><br>8   | 4                          | <sup>5</sup><br>9        | <sup>1</sup> 3<br>8 9    | <sup>1</sup> 3<br>7 9 | 6                          | <sup>7</sup> 8 9           | 2                          | <sup>7</sup> 8 9    |
| <sup>3</sup><br>6   | <sup>3</sup><br>5 6<br>8 9 | <sup>5</sup> 6<br>9      | 2                        | <sup>5</sup><br>7     | <sup>3</sup><br>4 5<br>7 8 | <sup>4</sup><br>7 8 9      | <sup>5</sup><br>7 8 9      | 1                   |
| 2                   | 1                          | 7                        | <sup>4</sup><br>8 9      | <sup>5</sup><br>9     | <sup>4</sup> 5<br>8        | <sup>4</sup><br>8 9        | <sup>5</sup> 6<br>8 9      | 3                   |

|                         |                          |                            |                          |                              |                         |                         |                          |                         |
|-------------------------|--------------------------|----------------------------|--------------------------|------------------------------|-------------------------|-------------------------|--------------------------|-------------------------|
| <sup>5</sup><br>9       | <sup>1</sup><br>5<br>9   | 6                          | <sup>7</sup> 5<br>9      | <sup>2</sup><br>7 9          | 4                       | 8                       | <sup>1</sup> 2 3<br>7    | <sup>1</sup> 2 3<br>9   |
| 4                       | 7                        | <sup>1</sup><br>5<br>8 9   | <sup>5</sup><br>8 9      | 3                            | <sup>2</sup><br>5       | <sup>1</sup> 2<br>9     | 6                        | <sup>1</sup> 2<br>9     |
| 2                       | <sup>8</sup> 9           | 3                          | <sup>6</sup><br>7 8 9    | 1                            | <sup>6</sup><br>7 9     | <sup>7</sup> 9          | 4                        | 5                       |
| 3                       | 2                        | <sup>1</sup><br>4 5<br>9   | <sup>1</sup><br>4 6<br>9 | <sup>4</sup><br>6<br>9       | 8                       | <sup>1</sup> 5<br>9     | <sup>1</sup> 5           | 7                       |
| <sup>8</sup> 9          | <sup>1</sup><br>4<br>8 9 | <sup>1</sup><br>4<br>8 9   | <sup>1</sup><br>4<br>7 9 | 5                            | <sup>1</sup> 2 3<br>7 9 | 6                       | <sup>1</sup> 2 3<br>8    | <sup>1</sup> 2 3<br>8 9 |
| <sup>5</sup> 6<br>8 9   | <sup>5</sup> 6<br>8 9    | 7                          | <sup>1</sup><br>9        | <sup>2</sup><br>9            | <sup>1</sup> 2 3<br>9   | <sup>1</sup> 2 3<br>5   | <sup>1</sup> 2 3<br>8    | 4                       |
| <sup>5</sup> 6<br>7 8   | <sup>4</sup> 5 6<br>8    | <sup>4</sup> 5<br>8        | 2                        | <sup>4</sup><br>7 8          | <sup>6</sup><br>7       | <sup>5</sup> 6<br>7     | 9                        | <sup>1</sup><br>8       |
| <sup>5</sup> 6<br>7 8 9 | <sup>5</sup> 6<br>8 9    | <sup>5</sup><br>8 9        | <sup>1</sup><br>7 9      | <sup>3</sup><br>5 6<br>7 8 9 | <sup>6</sup><br>7 9     | <sup>1</sup> 5 6<br>7 9 | 4                        | <sup>1</sup> 2<br>7 8   |
| 1                       | <sup>4</sup> 5<br>8 9    | <sup>2</sup><br>4 5<br>8 9 | <sup>4</sup> 5<br>7 9    | <sup>4</sup><br>7 8 9        | <sup>5</sup><br>7 9     | 3                       | <sup>2</sup><br>5<br>7 8 | 6                       |

|                            |                        |                          |                              |                         |                       |                       |                            |                       |
|----------------------------|------------------------|--------------------------|------------------------------|-------------------------|-----------------------|-----------------------|----------------------------|-----------------------|
| <sup>4</sup><br>7          | 8                      | 1                        | <sup>2</sup><br>6<br>7       | 9                       | 3                     | 5                     | <sup>2</sup><br>4<br>6     | <sup>2</sup><br>7     |
| 2                          | <sup>7</sup><br>6<br>9 | <sup>3</sup><br>7 9      | 4                            | <sup>1</sup><br>6       | 5                     | <sup>3</sup><br>7     | <sup>1</sup> 3<br>6        | 8                     |
| <sup>4</sup> 5<br>7        | <sup>5</sup> 6<br>7    | <sup>4</sup> 5<br>7      | <sup>3</sup><br>7            | <sup>1</sup> 2<br>6     | <sup>1</sup> 2<br>8   | <sup>1</sup> 2<br>6 7 | <sup>2</sup> 3<br>4 6      | <sup>1</sup> 2 3<br>6 |
| 8                          | 4                      | <sup>2</sup><br>5<br>9   | <sup>1</sup> 2 3<br>5 6<br>9 | 7                       | <sup>1</sup> 2<br>6   | <sup>2</sup> 3<br>6   | <sup>2</sup> 3<br>5 6<br>9 | <sup>1</sup> 2<br>5   |
| <sup>1</sup> 5<br>9        | <sup>1</sup><br>5<br>9 | 6                        | 8                            | <sup>1</sup> 2 3<br>4 5 | <sup>1</sup> 2<br>4   | <sup>2</sup> 3<br>7   | <sup>2</sup> 3<br>5<br>9   | <sup>1</sup> 2<br>5   |
| <sup>1</sup> 5<br>7 9      | 3                      | <sup>2</sup><br>5<br>7 9 | <sup>1</sup> 2<br>5 6<br>9   | <sup>1</sup> 2<br>5 6   | <sup>1</sup> 2<br>6   | 8                     | <sup>2</sup><br>5 6<br>9   | 4                     |
| <sup>1</sup> 3<br>4 5<br>7 | <sup>1</sup><br>5<br>7 | <sup>4</sup> 5<br>7      | <sup>3</sup><br>7            | <sup>1</sup> 2<br>5     | <sup>1</sup> 2<br>4 5 | <sup>1</sup> 2<br>4   | 9                          | 8                     |
| 6                          | <sup>1</sup><br>7      | 8                        | <sup>1</sup> 3<br>7          | <sup>1</sup> 3<br>7     | 9                     | <sup>2</sup><br>4     | <sup>2</sup><br>4 5        | <sup>2</sup><br>5     |
| <sup>4</sup> 5<br>9        | 2                      | <sup>4</sup> 5<br>9      | <sup>5</sup> 6<br>9          | <sup>4</sup> 5 6<br>8   | <sup>4</sup><br>8     | 1                     | 7                          | 3                     |

|                            |                              |                         |                          |                            |                        |                         |                              |                          |
|----------------------------|------------------------------|-------------------------|--------------------------|----------------------------|------------------------|-------------------------|------------------------------|--------------------------|
| <sup>1</sup><br>4<br>8     | <sup>1</sup><br>4 5<br>8     | <sup>1</sup><br>4 5 6   | 3                        | 9                          | <sup>1</sup><br>4<br>6 | <sup>1</sup><br>4<br>6  | 7                            | 2                        |
| <sup>1</sup> 2<br>4 6      | <sup>1</sup> 2<br>4          | 3                       | <sup>2</sup><br>4 6<br>8 | <sup>1</sup> 2<br>7 8      | <sup>1</sup> 2<br>6 7  | <sup>1</sup><br>4 6     | 9                            | 5                        |
| 9                          | 7                            | <sup>1</sup> 2<br>4 6   | <sup>2</sup><br>4 6      | <sup>1</sup> 2<br>6        | 5                      | 3                       | <sup>6</sup><br>8            | <sup>1</sup><br>4 6      |
| <sup>1</sup> 2<br>4 6<br>8 | <sup>1</sup> 2<br>4 5<br>8 9 | <sup>1</sup> 2<br>4 5 6 | <sup>2</sup><br>5 6<br>9 | <sup>2</sup> 3<br>5 6<br>7 | <sup>2</sup> 3<br>6    | <sup>4</sup> 5 6<br>7 9 | <sup>3</sup><br>6 4<br>7 8 9 | <sup>6</sup><br>8        |
| <sup>4</sup><br>8          | <sup>4</sup> 5<br>8 9        | <sup>4</sup> 5 6        | 1                        | <sup>3</sup><br>5 6<br>7   | <sup>3</sup><br>6      | 2                       | <sup>3</sup><br>6 4<br>7 8 9 | <sup>6</sup><br>8        |
| 3                          | <sup>2</sup><br>5<br>9       | 7                       | <sup>2</sup><br>5 6<br>9 | 4                          | 8                      | <sup>5</sup> 6<br>9     | 1                            | <sup>6</sup><br>9        |
| <sup>1</sup> 2<br>4 7      | 6                            | 9                       | <sup>2</sup><br>4<br>8   | <sup>1</sup> 2 3<br>8      | <sup>1</sup> 2 3<br>4  | <sup>1</sup><br>7       | 5                            | <sup>1</sup> 3<br>7      |
| <sup>1</sup><br>4<br>7     | 3                            | <sup>1</sup><br>4       | <sup>4</sup> 5 6         | <sup>1</sup><br>5 6        | 9                      | 8                       | 2                            | <sup>1</sup><br>6        |
| 5                          | <sup>1</sup> 2               | 8                       | 7                        | <sup>1</sup> 2 3<br>6      | <sup>1</sup> 2 3<br>6  | <sup>1</sup><br>6<br>9  | 4                            | <sup>1</sup> 3<br>6<br>9 |

|                     |                   |                          |                     |                       |                       |                   |                |                  |
|---------------------|-------------------|--------------------------|---------------------|-----------------------|-----------------------|-------------------|----------------|------------------|
| 1                   | 3                 | <sup>2</sup><br>6        | <sup>7</sup> 8<br>6 | <sup>2</sup><br>7 8   | 5                     | <sup>2</sup><br>7 | 9              | 4                |
| <sup>4</sup><br>8 9 | <sup>2</sup><br>8 | <sup>2</sup><br>6 4<br>9 | <sup>6</sup><br>7 9 | 3                     | <sup>2</sup><br>7 9   | <sup>2</sup><br>7 | 5              | 1                |
| <sup>2</sup><br>9   | 7                 | 5                        | <sup>2</sup><br>9   | 4                     | 1                     | 8                 | 3              | 6                |
| 5                   | 1                 | 3                        | <sup>7</sup> 8 9    | <sup>2</sup><br>7 8 9 | <sup>2</sup><br>7 8 9 | 4                 | 6              | <sup>7</sup> 8   |
| <sup>6</sup><br>9   | <sup>2</sup><br>6 | <sup>2</sup><br>6        | 4                   | 5                     | <sup>7</sup> 8        | 1                 | <sup>7</sup> 8 | 3                |
| 7                   | 4                 | 8                        | 3                   | 1                     | 6                     | 9                 | 2              | 5                |
| <sup>2</sup><br>8   | 5                 | 1                        | <sup>2</sup><br>7 9 | 6                     | 4                     | 3                 | <sup>7</sup> 8 | <sup>7</sup> 8 9 |
| <sup>3</sup><br>6   | 9                 | <sup>6</sup><br>7        | 1                   | <sup>7</sup> 8        | <sup>3</sup><br>7 8   | 5                 | 4              | 2                |
| <sup>4</sup><br>3   | <sup>2</sup><br>8 | <sup>4</sup><br>7        | 5                   | <sup>2</sup><br>7 9   | <sup>2</sup> 3<br>7 9 | 6                 | 1              | <sup>7</sup> 8 9 |

|     |     |     |     |     |     |     |       |     |
|-----|-----|-----|-----|-----|-----|-----|-------|-----|
| 1   | 4   | 2   | 2 3 | 2 3 | 2 3 | 2   | 2     | 6   |
| 2   | 5 6 | 5 6 | 7   | 2   | 2   | 4   | 9     | 3   |
| 2   | 6   | 6   | 3   | 2   | 2   | 1   | 2     | 5   |
| 4   | 2   | 1   | 5   | 2   | 2   | 7   | 9     | 2   |
| 3   | 7 8 | 2   | 4   | 1   | 9   | 5   | 2     | 2   |
| 4   | 2   | 9   | 1 2 | 8   | 2 3 | 2 3 | 1 2 3 | 2 3 |
| 4 5 | 2   | 4   | 5   | 3   | 3   | 8   | 6     | 1   |
| 4   | 6   | 1   | 3   | 1   | 2   | 3   | 7     | 5   |
| 5 6 | 5 6 | 3   | 1   | 2 3 | 2 3 | 2 3 | 2     | 4   |

|     |     |   |     |       |     |   |     |       |
|-----|-----|---|-----|-------|-----|---|-----|-------|
| 1 2 | 8   | 3 | 6   | 1     | 1 2 | 2 | 1   | 5     |
| 1 2 | 1 2 | 1 | 2   | 1 2 3 | 2 3 | 4 | 8   |       |
| 1 2 | 7   | 4 | 8   | 1 2 3 | 2 3 | 1 | 3   | 3     |
| 2   | 3   | 6 | 7   | 1     | 4   | 8 | 4 5 | 3     |
| 1   | 3   | 1 | 3   | 1     | 4 5 | 4 | 6   | 4 5 6 |
| 2   | 5   | 2 | 5   | 3     | 4   | 6 | 7   | 4 5 6 |
| 4   | 1   | 3 | 2   | 8     | 5   | 1 | 6   | 3     |
| 7   | 1   | 3 | 1   | 2     | 1   | 3 | 1 2 | 8     |
| 5 6 | 5   | 3 | 5 6 | 7     | 4   | 6 | 4   | 1     |

|       |     |   |   |     |   |     |   |   |
|-------|-----|---|---|-----|---|-----|---|---|
| 1     | 3   | 5 | 2 | 1   | 3 | 1   | 1 | 3 |
| 8     | 6   | 1 | 3 | 1   | 3 | 1   | 9 | 2 |
| 9     | 4   | 1 | 4 | 2   | 8 | 1   | 6 | 5 |
| 4 5   | 1   | 6 | 7 | 4 5 | 2 | 5   | 3 | 8 |
| 2     | 4   | 2 | 4 | 4 5 | 3 | 4 5 | 1 | 6 |
| 3     | 3   | 8 | 1 | 1   | 1 | 5   | 2 | 4 |
| 1 2 3 | 2 3 | 1 | 3 | 1   | 3 | 1   | 3 | 6 |
| 1     | 3   | 3 | 1 | 3   | 1 | 3   | 2 | 6 |
| 6     | 4   | 3 | 5 | 1   | 3 | 1   | 3 | 2 |

|     |   |       |     |     |       |       |   |     |
|-----|---|-------|-----|-----|-------|-------|---|-----|
| 1   | 3 | 2     | 4 5 | 3   | 8     | 1     | 3 | 1   |
| 8   | 1 | 3     | 6   | 2 3 | 2 3   | 9     | 1 | 3   |
| 1   | 3 | 1     | 3   | 2 3 | 5     | 1 2 3 | 4 | 8   |
| 1 2 | 1 | 3     | 3   | 2   | 2     | 5     | 1 | 5 6 |
| 5   | 1 | 4     | 4   | 8 9 | 7 8 9 | 6     | 4 | 8   |
| 6   | 7 | 4     | 2   | 1   | 4     | 2     | 5 | 3   |
| 2 3 | 3 | 5 6   | 1   | 4   | 2 3   | 6     | 5 | 2   |
| 2 3 | 3 | 4 5 6 | 4 5 | 6   | 1     | 7     | 5 | 2   |
| 2 3 | 8 | 4     | 2   | 2 3 | 2 3   | 2 3   | 1 | 3   |

|       |     |     |     |     |     |     |     |   |
|-------|-----|-----|-----|-----|-----|-----|-----|---|
| 1     | 5 6 | 2   | 1   | 3   | 3   | 8   | 4 5 | 4 |
| 5 6   | 5 6 | 7   | 2 3 | 6   | 4 5 | 9   | 4   | 1 |
| 6     | 4   | 6   | 2 3 | 6   | 3   | 1   | 2 3 | 5 |
| 2     | 1   | 3   | 1   | 3   | 3   | 8   | 1   | 3 |
| 4 5   | 9   | 4 5 | 1   | 6   | 2 3 | 2 3 | 2 3 | 3 |
| 1     | 4   | 6   | 7   | 8   | 5   | 9   | 4   | 3 |
| 3     | 1   | 1 2 | 5   | 4   | 2   | 6   | 9   | 1 |
| 4 5 6 | 5 6 | 9   | 8   | 1   | 5   | 3   | 4 5 | 2 |
| 1     | 4 5 | 1   | 5   | 1 2 | 2 3 | 3   | 1   | 3 |

|   |     |   |   |     |     |       |       |       |
|---|-----|---|---|-----|-----|-------|-------|-------|
| 8 | 2   | 6 | 2 | 5   | 4   | 3     | 9     | 1     |
| 1 | 4   | 3 | 6 | 8 9 | 8 9 | 4     | 2     | 4 5   |
| 9 | 5   | 4 | 3 | 1   | 4   | 2     | 8     | 4     |
| 2 | 4   | 6 | 4 | 8   | 5   | 4     | 7 8 9 | 4 5 6 |
| 3 | 1   | 3 | 5 | 1   | 4   | 7 8 9 | 4     | 6     |
| 7 | 1   | 9 | 1 | 5   | 6   | 2     | 4     | 3     |
| 4 | 2   | 2 | 3 | 2   | 6   | 5     | 1     | 7     |
| 5 | 2   | 6 | 4 | 1   | 6   | 3     | 8 9   | 6     |
| 3 | 2 3 | 1 | 2 | 5   | 4   | 6     | 4     | 6     |

|                    |                    |                    |                    |                    |                      |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|--------------------|--------------------|--------------------|
|                    | <sup>4</sup> 7 8 9 | 5                  | <sup>1</sup> 3     | <sup>2</sup> 8 9   | <sup>1</sup> 3       | <sup>2</sup> 4 9   | 6                  | <sup>2</sup> 4 9   |
|                    | 8 9                | 3                  | <sup>4</sup> 8 9   | 6                  | <sup>2</sup> 8 9     | 7                  | <sup>1</sup> 2 4 5 | <sup>1</sup> 2 4 5 |
| 1                  | 6                  | 2                  | <sup>4</sup> 5 8   | <sup>4</sup> 5 8 9 | <sup>4</sup> 5 8     | 7                  |                    | 3                  |
| 4                  | <sup>1</sup> 5 7 9 | <sup>1</sup> 7 9   | <sup>1</sup> 2 7 8 | <sup>5</sup> 7 8   | <sup>1</sup> 2 5 8   | 3                  | 6                  |                    |
| 3                  | <sup>1</sup> 5 7   | <sup>1</sup> 6 7   | <sup>1</sup> 2 4 5 | <sup>4</sup> 5 6 7 | 9                    | 8                  | <sup>1</sup> 2 4 5 | <sup>1</sup> 2 4 5 |
| 2                  | 8                  | <sup>1</sup> 6 7 9 | <sup>1</sup> 4 5   | 3                  | <sup>1</sup> 4 5 6   |                    | <sup>1</sup> 4 5 9 | <sup>1</sup> 4 5 9 |
| <sup>5</sup> 6 9   | 2                  | <sup>1</sup> 4 9   | <sup>3</sup> 4 5   | <sup>4</sup> 5 6   | <sup>4</sup> 5 6     | <sup>1</sup> 3 6 9 | 7                  | 8                  |
| <sup>6</sup> 7 8 9 | <sup>4</sup> 7 9   | <sup>4</sup> 7 8 9 | <sup>2</sup> 3 7 8 | 1                  | <sup>2</sup> 3 4 6 8 | <sup>2</sup> 3 6 9 | 5                  | <sup>2</sup> 9     |
| <sup>5</sup> 6 7   |                    | 3                  | 9                  | <sup>5</sup> 6 7 8 | <sup>2</sup> 5 6 8   | <sup>1</sup> 2 6   | 4                  | <sup>1</sup> 2     |

|                      |                  |                          |                        |                    |                      |                      |                    |                      |
|----------------------|------------------|--------------------------|------------------------|--------------------|----------------------|----------------------|--------------------|----------------------|
| 6                    | <sup>4</sup> 8 9 | <sup>3</sup> 5 8 9       | <sup>4</sup> 5 9       | 1                  | <sup>5</sup> 7 9     | <sup>3</sup> 7 8 9   | 2                  | <sup>7</sup> 8       |
| 2                    | 1                | 2                        | 3                      | 6                  | <sup>2</sup> 7 9     | <sup>7</sup> 8 9     | 5                  | 4                    |
| <sup>2</sup> 3 5 9   | <sup>3</sup> 4 9 | 7                        | <sup>2</sup> 4 5 9     | <sup>4</sup> 5 9   | 8                    | <sup>1</sup> 6 9     | <sup>3</sup> 1 6   |                      |
| 4                    | <sup>7</sup> 8   | <sup>3</sup> 5 6 8       | <sup>2</sup> 5 6 8     | <sup>5</sup> 8     | <sup>2</sup> 5 6     | <sup>5</sup> 6 7 8   | 1                  | 9                    |
| <sup>2</sup> 3 5 8 9 | <sup>3</sup> 8 9 | <sup>1</sup> 2 3 5 6 8 9 | 7                      | <sup>5</sup> 8 9   | <sup>1</sup> 2 5 6 9 | 4                    | <sup>3</sup> 8     | <sup>2</sup> 5 6 8   |
| <sup>2</sup> 5 8 9   |                  | <sup>1</sup> 2 5 6 8 9   | <sup>1</sup> 2 5 6 8 9 | 3                  | 4                    | <sup>5</sup> 6 7 8   | <sup>7</sup> 8     | <sup>2</sup> 5 6 7 8 |
| <sup>3</sup> 7 8 9   | 6                | <sup>4</sup> 8 9         | <sup>4</sup> 5 8 9     | 2                  | <sup>5</sup> 9       | <sup>3</sup> 5 7 8 9 | <sup>1</sup> 5 7 8 | <sup>1</sup> 5 7 8   |
| 1                    | 2                | <sup>3</sup> 8 9         | <sup>5</sup> 6 8 9     | <sup>5</sup> 7 8 9 | <sup>5</sup> 6 9     | <sup>5</sup> 7 8 9   | 4                  | <sup>5</sup> 7 8     |
|                      | 5                | <sup>4</sup> 8 9         | <sup>1</sup> 4 8 9     | <sup>1</sup> 9     |                      | 2                    | 6                  | 3                    |

|                    |                    |                    |                |                    |                  |                    |                      |                      |
|--------------------|--------------------|--------------------|----------------|--------------------|------------------|--------------------|----------------------|----------------------|
| 4                  | 9                  | <sup>5</sup> 3     | 6              | 8                  | <sup>1</sup> 5   | 2                  | 7                    | <sup>1</sup> 3       |
| <sup>1</sup> 5 6   | <sup>1</sup> 2 3 5 | <sup>3</sup> 7 5 6 |                | <sup>3</sup> 7     | <sup>2</sup> 5 9 | 4                  | <sup>1</sup> 3 9     | <sup>1</sup> 3 6 9   |
| <sup>1</sup> 6 8   | <sup>1</sup> 2 3 8 | <sup>3</sup> 6 7   |                | <sup>3</sup> 2 9   | <sup>1</sup> 4   | 5                  | <sup>1</sup> 3 4 6 9 | <sup>1</sup> 3 4 6 9 |
| <sup>6</sup> 4 8 9 | <sup>3</sup> 4 6 9 | <sup>3</sup> 4 6 9 | 2              | 7                  | <sup>5</sup> 9   | <sup>4</sup> 5 8 9 | 1                    | <sup>4</sup> 5 8 9   |
| <sup>5</sup> 8 9   | <sup>4</sup> 5 8 9 | <sup>3</sup> 4 5 9 | <sup>4</sup> 8 | 1                  | 6                | 7                  | <sup>4</sup> 9       | 2                    |
| 2                  | 7                  | 1                  | <sup>4</sup> 8 | <sup>5</sup> 9     | 3                | <sup>4</sup> 5 8 9 | 6                    | <sup>4</sup> 5 8 9   |
| <sup>1</sup> 5 7   | 6                  | 8                  | 9              | <sup>4</sup> 3 7   | <sup>2</sup> 4 5 | <sup>1</sup> 3 4 5 | <sup>2</sup> 3 4 5 3 | <sup>1</sup> 3 4 5 3 |
| <sup>1</sup> 7 9   | <sup>1</sup> 4     | 2                  | 5              | <sup>4</sup> 3 7 8 |                  | 6                  | <sup>3</sup> 4 9 8 9 | <sup>3</sup> 4 9 8 9 |
| 3                  | <sup>4</sup> 5     | <sup>4</sup> 5 9   | 1              | 6                  | <sup>2</sup> 8   | <sup>4</sup> 5 8 9 | <sup>2</sup> 4 9     | 7                    |

|             |           |             |         |         |           |           |           |           |
|-------------|-----------|-------------|---------|---------|-----------|-----------|-----------|-----------|
| 3           | 7         |             | 6       |         | 1         |           |           |           |
|             |           | 8 9         |         | 4 5 9   |           | 4 5 8     | 2 5 8     | 4 5 8     |
| 8 9         | 1         | 4           | 3 5 7   | 2 5 9   | 2 3 9     | 2 3 7 8   | 2 5 6 8   | 3 5 6 7 8 |
| 2 6         | 5         | 2 6         | 3 7     | 8 4     | 3         | 1         | 9         | 4 3 7     |
| 1 2 4 6 7 8 | 2 3 4 6   | 1 2 3 6 7 8 | 3 7 8 9 | 2 6 7 9 | 5         | 4 7 8     | 1 2 6 8   | 4 6 7 8 9 |
| 2 4 5 6 7 8 | 9         | 2 6 7 8     | 7 8     | 1       | 2 6 8     | 2 4 5 7 8 | 3         | 4 5 6 7 8 |
| 1 2 5 6 7 8 | 2 3 6 7 8 | 1 2 3 6 7 8 | 4 7 9   | 2 6 9   | 2 3 6 8 9 | 2 5 7 8   | 1 2 5 6 8 | 5 6 7 8 9 |
| 4 6         | 8         | 5           | 2       | 3       | 4 6       | 9         | 7         | 1         |
| 1 2 4 7 9   | 2 3 4 7 9 | 1 2 3 7 9   | 1 5 8 9 | 4 5 9   | 4 8 9     | 6         | 5 8       | 5 8 3     |
| 1 6 9       | 3 6       | 1 3 6 9     | 1 5 8 9 | 5 6 9   | 7         | 5 8 3     | 4         | 2         |

|                      |                      |                      |                    |                    |                    |                    |                        |                    |
|----------------------|----------------------|----------------------|--------------------|--------------------|--------------------|--------------------|------------------------|--------------------|
| 1                    | <sup>2</sup> 7 8 9   | <sup>4</sup> 7 8 9   | 3                  | <sup>6</sup> 8     | <sup>4</sup> 7     | 5                  | <sup>7</sup> 6 9       | <sup>2</sup> 9     |
| 5                    | <sup>2</sup> 7 8     | <sup>3</sup> 7 8     | 9                  | <sup>6</sup> 8     | <sup>4</sup> 7     | <sup>1</sup> 2 7   | <sup>1</sup> 3 6       | <sup>1</sup> 2 3 6 |
| <sup>2</sup> 3 7 9   | 6                    | <sup>3</sup> 7 9     | <sup>1</sup> 2 5 7 | <sup>1</sup> 2 5 7 | <sup>1</sup> 2 5 7 | 4                  | <sup>1</sup> 3 7 9     | 8                  |
| <sup>6</sup> 8 9     | 4                    | <sup>1</sup> 6 8 9   | <sup>1</sup> 5     | 7                  | <sup>1</sup> 5 6 8 | <sup>1</sup> 3 6 9 | 2                      | <sup>1</sup> 3 9   |
| <sup>6</sup> 7 8     | 3                    | 2                    | <sup>1</sup> 4     | 9                  | <sup>1</sup> 6 8   | <sup>1</sup> 6     | 5                      | <sup>4</sup> 7     |
| <sup>1</sup> 6 7 9   | 5                    | <sup>1</sup> 4 7 9   | <sup>1</sup> 2 4   | 3                  | <sup>1</sup> 2 6   | <sup>1</sup> 6 9   | 8                      | <sup>4</sup> 7     |
| <sup>4</sup> 9       | 5                    | <sup>3</sup> 9       | <sup>1</sup> 2 7   | <sup>1</sup> 2 7   | <sup>1</sup> 2 7   | 8                  | <sup>4</sup> 9         | 6                  |
| <sup>2</sup> 6 7 8 9 | <sup>1</sup> 2 7 8 9 | <sup>1</sup> 6 7 8 9 | <sup>6</sup> 8     | 4                  | 3                  | <sup>1</sup> 2 9   | <sup>1</sup> 9         | 5                  |
| <sup>2</sup> 3 4 6 8 | <sup>1</sup> 2 8     | <sup>1</sup> 3 6 8   | <sup>6</sup> 8     | 5                  | 9                  | 7                  | <sup>1</sup> 4 3 1 2 3 |                    |

|                      |                  |                  |                    |                      |                    |                    |                      |                  |
|----------------------|------------------|------------------|--------------------|----------------------|--------------------|--------------------|----------------------|------------------|
| 1                    | <sup>2</sup> 8 9 | 3                | 6                  | <sup>2</sup> 5 8     | <sup>2</sup> 8 9   | 4                  | <sup>2</sup> 7 9     | <sup>5</sup> 7 8 |
| 2                    | 6                | 5                | <sup>4</sup> 7     | <sup>3</sup> 4       | <sup>3</sup> 1 2   | 9                  | <sup>1</sup> 8       |                  |
| <sup>8</sup> 9       | 4                | 7                | <sup>2</sup> 5 8   | <sup>1</sup> 8 9     | <sup>1</sup> 8 9   | 6                  | 3                    |                  |
| <sup>2</sup> 3 6 8 9 | <sup>2</sup> 7 8 | 1                | 9                  | <sup>2</sup> 3 4 8   | <sup>2</sup> 3 4 8 | <sup>2</sup> 5 6 7 | <sup>2</sup> 4 5 7   | <sup>4</sup> 5 7 |
| <sup>2</sup> 3 6 8 9 | <sup>2</sup> 8 9 | 4                | 7                  | <sup>2</sup> 3 8 9   | 5                  | <sup>1</sup> 2 6 9 | <sup>1</sup> 2 1 9   |                  |
| 5                    | <sup>2</sup> 7 9 | <sup>2</sup> 6 9 | 1                  | <sup>4</sup> 6 4     | <sup>2</sup> 4     | 8                  | 3                    | <sup>4</sup> 7 9 |
| <sup>2</sup> 4 7     | <sup>1</sup> 5 8 | <sup>2</sup> 8   | <sup>2</sup> 3 4 5 | 9                    | <sup>1</sup> 2 3 4 | <sup>1</sup> 5 7 8 | <sup>4</sup> 5 7 8   | 6                |
| <sup>4</sup> 6 9     | 3                | <sup>6</sup> 8 9 | <sup>4</sup> 5     | <sup>1</sup> 4 5     | 7                  | <sup>1</sup> 5 9   | <sup>1</sup> 4 5 8   | 2                |
| <sup>4</sup> 7 9     | <sup>1</sup> 5 9 | <sup>2</sup> 9   | 8                  | <sup>1</sup> 2 3 4 5 | 6                  | <sup>1</sup> 5 7 9 | <sup>1</sup> 4 5 7 9 |                  |

|              |              |            |            |            |              |          |            |            |
|--------------|--------------|------------|------------|------------|--------------|----------|------------|------------|
| 1 2<br>7 5 9 | 2 5<br>9     | 4          | 1 2<br>6   | 1 5 6<br>7 | 3            | 7 8 9    | 2<br>8     | 2 5<br>8   |
| 8            | 2 3<br>5     | 1 2<br>5 7 | 1 2<br>4   | 9          | 1 2<br>4 5 7 | 4        | 6          | 2 3<br>4 5 |
| 2 5<br>7 9   | 2 3<br>5 9   | 6          | 2<br>4     | 4 5<br>7   | 8            | 3<br>4 7 | 2 3<br>4   | 1          |
| 4 2<br>7     | 1            | 3          | 5          | 4<br>7 8   | 4 2<br>7     | 6        | 9          | 4 2<br>8   |
| 6            | 2<br>4 8     | 9          | 1 2<br>4 8 | 1 3<br>4 8 | 1 2<br>4     | 5        | 2 3<br>4 8 | 7          |
| 2 4 5<br>7 8 | 2 4 5<br>7 8 | 2 5<br>7 8 | 9          | 4 3<br>7 8 | 6            | 4 3<br>8 | 1          | 2 3<br>4 8 |
| 1 3<br>4     | 6            | 1<br>8     | 7          | 2<br>4     | 1 4<br>4     | 5        | 9          |            |
| 2 4 5<br>9   | 2 4 5<br>8 9 | 2 5<br>8   | 3          | 4 5 6<br>8 | 4 5          | 1        | 7          | 4 6<br>8   |
| 1 3<br>4 5   | 7            | 1 5<br>8   | 1 4<br>8   | 1 5 6<br>8 | 9            | 2        | 3 4<br>8   | 3 6<br>8   |

|            |              |              |          |            |            |            |            |            |
|------------|--------------|--------------|----------|------------|------------|------------|------------|------------|
| 4 3<br>6 9 | 3<br>9       | 1            | 2 3<br>4 | 8          | 2 3<br>4   | 4 5<br>9   | 4 5 6<br>9 | 7          |
| 2<br>4 6 7 | 2<br>7 8 9   | 2<br>4 7 8   | 1        | 4<br>7     | 5          | 4<br>8 9   | 2 6<br>9   | 3          |
| 2 3<br>4 7 | 5            | 2 3<br>4 7 8 | 6        | 3<br>4 7   | 9          | 4<br>8     | 1          | 2 4<br>8   |
| 1          | 6            | 4 3<br>7     | 5        | 2<br>4     | 3          | 4 5<br>9   | 8          | 4 5<br>9   |
| 2 3<br>4 7 | 2 3<br>7 8 9 | 2 3<br>7 8   | 5        | 1 3<br>4 9 | 1 3<br>4 8 | 6          | 2 3<br>4 5 | 1 2<br>4 5 |
| 2 3<br>4 9 | 2 3<br>8 9   | 5            | 4 3<br>9 | 1 3<br>4 6 | 1 3<br>4 6 | 7          | 2 3<br>4   | 1 2<br>4   |
| 5          | 1 3<br>7     | 3 6<br>7     | 8        | 1 3<br>4 6 | 1 3<br>4 6 | 2          | 3 4<br>7 9 | 4 6<br>9   |
| 2 3<br>6   | 1 2 3<br>6   | 9            | 2 3<br>4 | 5          | 7          | 1 3<br>4 8 | 3 4<br>8   | 4 6<br>8   |
| 8          | 4            | 2 3<br>7 6   | 2 3<br>9 | 1 3<br>6   | 1 2 3<br>6 | 1 3<br>5 9 | 3 5<br>9   | 5 6<br>9   |

|              |            |            |        |        |        |            |          |          |
|--------------|------------|------------|--------|--------|--------|------------|----------|----------|
| 1 3<br>7     | 1 3<br>7   | 1 3<br>7   | 5      | 4      | 2<br>8 | 9          | 6<br>8   | 2 6<br>8 |
| 2 4<br>8 9   | 2 4<br>8 9 | 5 8<br>9   | 6      | 7      | 2<br>8 | 1          | 5<br>8   | 3        |
| 2 6<br>8     | 2 6<br>8   | 5 6<br>8   | 1      | 9      | 3      | 2 5<br>8   | 7        | 4        |
| 3 8<br>9     | 3 8<br>9   | 2          | 7      | 6      | 1      | 4 5<br>8   | 4 5<br>8 | 9        |
| 5            | 1 6<br>9   | 1 6<br>9   | 2<br>9 | 3<br>8 | 4      | 2 3<br>7 8 | 3 6<br>8 | 2 6<br>8 |
| 6 9<br>9     | 7          | 4          | 2<br>9 | 3<br>8 | 5      | 2 3<br>8   | 1        | 2 6<br>8 |
| 4 3<br>9     | 5          | 3<br>9     | 8      | 2      | 7      | 6 4<br>8   | 3        | 1        |
| 3 6<br>7 8   | 3 6<br>8   | 3 6<br>7 8 | 4      | 1      | 9      | 7 8<br>9   | 2        | 5        |
| 1 2<br>4 7 8 | 1 2<br>4 8 | 1<br>7 8   | 3      | 5      | 6      | 4 7<br>8   | 9        | 7 8      |

|            |            |              |              |            |          |                |                |                |
|------------|------------|--------------|--------------|------------|----------|----------------|----------------|----------------|
| 3 6<br>9   | 2 4<br>9   | 2 4<br>9     | 5 8<br>9     | 5 8<br>9   | 7        | 1 2 3<br>9     | 2 3 6<br>9     | 1 2<br>9       |
| 3 9<br>9   | 7          | 8            | 1 2<br>9     | 1 6<br>9   | 2 6<br>9 | 5              | 4 3<br>9       | 4 9<br>9       |
| 1          | 2 5<br>6   | 5 6          | 3            | 4          | 9        | 8              | 7              | 2 6<br>9       |
| 2          | 1 5<br>7   | 3 5<br>7     | 1 5<br>7 8 9 | 1 3<br>7   | 4        | 6              | 5 8<br>9       | 1 5<br>8 9     |
| 4          | 1 5<br>6   | 9            | 1 5<br>8     | 2 5<br>8   | 6        | 7              | 5 8<br>9       | 3              |
| 8          | 1 5<br>6   | 5 6          | 1 5<br>7 9   | 1 3<br>6   | 3 5<br>6 | 1 2 4<br>9     | 2 4 5<br>9     | 1 2 4<br>5 9   |
| 7          | 2 4<br>8 9 | 3 6<br>8 9   | 2 4<br>8     | 5 8<br>9   | 5 8<br>9 | 4 2<br>9       | 1              | 2 4 5<br>6 8 9 |
| 5          | 2 4<br>8 9 | 4 2<br>9     | 6            | 3 7<br>9   | 1        | 4 2 3<br>9     | 2 3 4 5<br>8 9 | 2 4 5<br>7 8 9 |
| 5 6 4<br>8 | 2 1<br>8   | 1 4 5<br>7 8 | 2 9<br>8     | 2 3 5<br>8 | 4        | 2 3 4 5<br>6 8 | 4 5 6<br>7 8   | 2 4 5<br>7 8   |

|            |          |                |                |                |            |            |                |              |
|------------|----------|----------------|----------------|----------------|------------|------------|----------------|--------------|
| 7          | 1 2<br>4 | 3<br>9         | 1 2 3<br>6     | 2 3 6<br>6     | 2 6<br>6   | 4 5 6<br>9 | 4 5 6<br>8 9   | 4 5 6<br>8 9 |
| 5 8<br>9   | 6        | 5 8<br>9       | 4 7<br>9       | 4 7<br>9       | 4 9<br>9   | 3          | 1              | 2            |
| 2 4<br>9   | 1 2<br>4 | 3 1 2 3<br>6 9 | 8              | 5              | 4 6<br>9   | 7          | 4              | 9            |
| 1 2<br>4 8 | 5        | 7              | 4 2<br>9       | 4 2<br>9       | 3          | 1 4<br>9   | 4 8<br>9       | 6            |
| 9          | 4 8<br>9 | 4 8<br>9       | 5 7<br>9       | 1 4<br>8       | 6          | 2          | 5 3<br>7       | 5 3<br>7     |
| 1 2<br>4 8 | 3        | 2 4<br>8       | 2 4 5 6<br>7 9 | 2 4 5 6<br>7 9 | 4 6<br>8 9 | 1 4 5<br>9 | 4 5<br>8 9     | 4 5<br>7 8 9 |
| 6          | 7        | 1              | 2 3<br>4 5     | 9              | 4 2<br>4   | 8          | 2 3<br>4 5     | 3 4 5<br>9   |
| 3          | 2 4<br>8 | 2 4 5<br>8     | 2 4 5 6<br>8   | 2 4 5 6<br>8   | 1          | 7          | 2 4 5<br>6 9   | 4 5<br>9     |
| 2 4 5<br>8 | 9        | 2 4 5<br>8     | 2 3 4 5 6<br>8 | 2 3 4 5 6<br>8 | 7          | 4 5 6<br>8 | 2 3 4 5 6<br>8 | 1            |

|            |              |              |                  |                |              |                |                |                |
|------------|--------------|--------------|------------------|----------------|--------------|----------------|----------------|----------------|
| 9          | 3            | 2 4 5<br>9   | 2 5<br>7 8       | 4 6<br>8       | 2 5<br>7 8   | 5 6<br>7 8     | 5 7 8<br>9     | 1              |
| 1 5<br>9   | 6            | 7            | 1 3<br>5 8 9     | 1 4<br>8 9     | 1 5<br>8 9   | 5 8<br>9       | 2              | 4 5<br>8 9     |
| 8          | 1 4<br>5     | 1 2 4<br>5   | 1 2 5<br>7 9     | 1 4 6<br>9     | 1 2 5<br>7 9 | 3              | 5 4 5 6<br>7 9 | 4 5 6<br>7 9   |
| 1 5<br>9   | 2            | 4 9<br>9     | 4 9<br>9         | 7              | 6            | 1 5<br>8       | 3              | 5 8<br>9       |
| 6          | 1 4 5<br>7 8 | 1 4 5<br>8   | 1 4 5<br>8       | 3 1 5<br>8     | 9            | 1 5<br>7       | 2              |                |
| 3 1<br>7   | 5 7 8<br>9   | 5 8 9<br>9   | 1 5<br>8 9       | 2 1 5<br>8 9   | 4            | 6              | 5 7<br>9       |                |
| 4          | 1 5<br>7 8   | 1 5<br>8     | 6 8 9<br>9       | 1 1 2 3<br>8 9 | 7 8 9        | 1 2 5<br>7 8   | 1 5<br>7 8 9   | 5 7 8 9<br>9   |
| 2 7<br>9   | 9            | 1 8<br>9     | 1 2 7 8<br>9     | 5 7 8<br>9     | 1 2 7 8<br>9 | 1 2 6<br>7 8   | 4              | 3              |
| 2 3 7<br>9 | 1 5<br>7 8   | 1 3 5 6<br>8 | 1 2 3 1<br>7 8 9 | 1 8 9<br>9     | 4            | 1 2 5 6<br>7 8 | 1 5<br>7 8 9   | 5 6 7 8 9<br>9 |

|                       |                       |                     |                       |                       |                     |                       |                       |                       |
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| <sup>2 3</sup><br>4 5 | 9                     | <sup>4 5</sup>      | <sup>2 3</sup><br>4 5 | 6                     | 7                   | 1                     | <sup>3</sup><br>4     | <sup>3</sup><br>4     |
| <sup>1 3</sup><br>4 5 | <sup>1 3</sup><br>4 5 | 8                   | <sup>1 3</sup><br>4 5 | <sup>1 3</sup><br>5   | <sup>1 4</sup><br>9 | 2                     | 6                     | 7                     |
| <sup>1 2 3</sup><br>4 | 6                     | 7                   | <sup>1 2 3</sup><br>4 | <sup>1 2 3</sup><br>8 | <sup>1 2</sup><br>4 | <sup>3</sup><br>4     | 5                     | <sup>3</sup><br>4     |
| <sup>4 5</sup><br>8 9 | <sup>4 5</sup><br>8 9 | 6                   | <sup>1</sup><br>4     | <sup>1</sup><br>7 8   | 3                   | <sup>4 5</sup><br>8 9 | <sup>1</sup><br>4     | 2                     |
| 7                     | <sup>2 3</sup><br>4   | 1                   | <sup>2</sup><br>4     | 9                     | 5                   | 6                     | <sup>3</sup><br>4     | <sup>3</sup><br>4     |
| <sup>3</sup><br>4 5   | <sup>2 3</sup><br>4 5 | <sup>4 5</sup><br>9 | 6                     | <sup>1 2</sup><br>7 8 | <sup>1 2</sup><br>4 | <sup>3</sup><br>4 5   | <sup>1 3</sup><br>4   | <sup>1 3</sup><br>4 5 |
| <sup>1</sup><br>4 5   | 7                     | 3                   | 8                     | <sup>1 2</sup><br>5   | 6                   | <sup>4 5</sup><br>9   | <sup>1 2</sup><br>4   | <sup>1</sup><br>4 5   |
| <sup>1</sup><br>5     | <sup>1</sup><br>5     | <sup>5</sup><br>9   | 7                     | 4                     | <sup>1 2</sup><br>9 | <sup>3</sup><br>5     | <sup>1 2 3</sup><br>9 | 6                     |
| 6                     | <sup>1</sup><br>4 5   | 2                   | <sup>1 3</sup><br>5   | <sup>1 3</sup><br>5   | <sup>1</sup><br>9   | 7                     | <sup>1</sup><br>4     | <sup>1</sup><br>4 5   |

|                       |                     |                       |                     |                       |                     |                   |                     |
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| <sup>4 5</sup><br>8   | 6                   | <sup>2</sup><br>4 5   | <sup>2</sup><br>7 8 | 1                     | 3                   | <sup>2</sup><br>4 | <sup>2</sup><br>8 9 |
| 4                     | 9                   | <sup>2 3</sup><br>7 8 | 5                   | <sup>2 3</sup><br>7 8 | <sup>2 3</sup><br>6 | <sup>2</sup><br>4 | <sup>2</sup><br>6   |
| 1                     | <sup>3</sup><br>7   | <sup>2 3</sup><br>7 8 | <sup>2 3</sup><br>6 | 4                     | <sup>2 3</sup><br>6 | <sup>2</sup><br>6 | 5                   |
| 2                     | 1                   | <sup>3</sup><br>7 8   | <sup>3</sup><br>6   | 5                     | 4                   | 9                 | <sup>3</sup><br>6   |
| <sup>4 5</sup><br>9   | <sup>4 5</sup><br>9 | <sup>4 5</sup><br>9   | <sup>1</sup><br>8   | <sup>1 3</sup><br>6   | <sup>1 3</sup><br>8 | <sup>2</sup><br>6 | <sup>2 3</sup><br>6 |
| <sup>6</sup><br>8     | <sup>3</sup><br>7   | <sup>3</sup><br>7 8   | 9                   | <sup>2 3</sup><br>7 8 | <sup>2 3</sup><br>6 | 5                 | 1                   |
| 7                     | 2                   | 1                     | 4                   | <sup>3</sup><br>9     | <sup>3</sup><br>5   | 8                 | <sup>5 6</sup><br>9 |
| 3                     | 8                   | 4                     | <sup>2</sup><br>9   | 6                     | <sup>2</sup><br>7   | 1                 | <sup>2</sup><br>4 5 |
| <sup>4 5 6</sup><br>9 | <sup>4 5</sup><br>9 | <sup>4 5 6</sup><br>9 | <sup>1 2</sup><br>7 | <sup>1 2</sup><br>7   | 8                   | <sup>2</sup><br>4 | <sup>2</sup><br>7   |

|                       |                       |                   |                       |                       |                       |                       |                   |                   |
|-----------------------|-----------------------|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------|-------------------|
| <sup>1</sup><br>5 6   | 2                     | <sup>1</sup><br>5 | <sup>5</sup><br>7 8   | <sup>1</sup><br>7 8   | <sup>1</sup><br>7 8   | <sup>5 6</sup><br>9   | 4                 | 3                 |
| <sup>5</sup><br>8 9   | 4                     | <sup>5</sup><br>9 | <sup>5</sup><br>8 9   | <sup>3</sup><br>8 9   | 6                     | 2                     | 7                 | 1                 |
| 7                     | <sup>1</sup><br>5 6   | 3                 | <sup>2</sup><br>4 5   | <sup>1 2</sup><br>4   | <sup>1</sup><br>4     | <sup>5 6</sup><br>9   | <sup>5</sup><br>8 | <sup>6</sup><br>8 |
| <sup>1 3</sup><br>4 5 | <sup>1 3</sup><br>5 6 | 2                 | <sup>3</sup><br>7 8   | <sup>4</sup><br>7 8   | <sup>1 3</sup><br>7 8 | <sup>4 5 6</sup><br>8 | <sup>5</sup><br>8 | 9                 |
| <sup>1 3</sup><br>4 5 | <sup>1 3</sup><br>5 6 | 8                 | <sup>2 3</sup><br>4   | <sup>1 2 3</sup><br>4 | <sup>1 3</sup><br>6   | 7                     | <sup>3</sup><br>5 | <sup>2</sup><br>6 |
| <sup>3</sup><br>4     | <sup>6</sup><br>9     | <sup>4</sup><br>7 | <sup>2 3</sup><br>7 8 | <sup>2 3</sup><br>4   | 5                     | <sup>4</sup><br>6     | 1                 | <sup>2</sup><br>6 |
| <sup>3</sup><br>5     | <sup>3</sup><br>7 8   | 6                 | <sup>1</sup><br>7 8   | <sup>5</sup><br>9     | 9                     | <sup>3</sup><br>8     | 2                 | 4                 |
| 2                     | <sup>1</sup><br>5     | <sup>3</sup><br>8 | <sup>1</sup><br>4 5   | 6                     | <sup>4 5</sup><br>8   | <sup>3</sup><br>4     | <sup>3</sup><br>8 | 9                 |
| <sup>3</sup><br>4     | <sup>3</sup><br>9     | <sup>3</sup><br>7 | <sup>3</sup><br>7 8   | <sup>3</sup><br>7 8   | 2                     | 1                     | 6                 | 5                 |

|                     |                     |                   |                     |                     |                   |                   |                   |                     |
|---------------------|---------------------|-------------------|---------------------|---------------------|-------------------|-------------------|-------------------|---------------------|
| <sup>2</sup><br>9   | <sup>2</sup><br>7   | 8                 | <sup>3</sup><br>7   | <sup>6</sup><br>9   | <sup>3</sup><br>6 | 1                 | 5                 | 4                   |
| <sup>3</sup><br>9   | <sup>3</sup><br>7   | 1                 | 2                   | 5                   | 4                 | 8                 | <sup>7</sup><br>9 | 6                   |
| 4                   | 5                   | 6                 | 8                   | <sup>1</sup><br>7   | <sup>1</sup><br>9 | 2                 | <sup>7</sup><br>9 | 3                   |
| <sup>5 6</sup><br>7 | <sup>4</sup><br>8   | <sup>3</sup><br>4 | <sup>1 3</sup><br>7 | <sup>1</sup><br>5 6 | <sup>1</sup><br>7 | <sup>3</sup><br>6 | 2                 | <sup>1</sup><br>8 9 |
| <sup>5 6</sup><br>7 | <sup>4</sup><br>8   | 9                 | <sup>1</sup><br>5 6 | <sup>1</sup><br>6   | 2                 | 7                 | <sup>3</sup><br>4 | <sup>1</sup><br>6   |
| 7                   | 1                   | 2                 | <sup>3</sup><br>6   | 4                   | <sup>8 9</sup>    | 5                 | <sup>3</sup><br>6 | <sup>8 9</sup>      |
| <sup>2 3</sup><br>4 | <sup>2 3</sup><br>7 | 9                 | 8                   | <sup>1</sup><br>6   | <sup>3</sup><br>4 | <sup>1</sup><br>6 | <sup>3</sup><br>4 | 5                   |
| 8                   | 9                   | <sup>4</sup><br>3 | <sup>3</sup><br>6   | 2                   | 5                 | <sup>3</sup><br>4 | <sup>1</sup><br>6 | 7                   |
| 1                   | 6                   | 5                 | 4                   | 3                   | 7                 | 9                 | 8                 | 2                   |

|                     |                     |                     |                     |                       |                       |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|-----------------------|-----------------------|---------------------|---------------------|---------------------|
| 1                   | <sup>2 3</sup><br>6 | 5                   | <sup>4</sup><br>3   | <sup>2 3</sup><br>6   | <sup>2 3</sup><br>4   | 9                   | 8                   | 7                   |
| <sup>8 9</sup>      | 4                   | <sup>2 3</sup><br>6 | <sup>8 9</sup>      | 5                     | 7                     | <sup>3</sup><br>6   | <sup>2 3</sup><br>6 | 1                   |
| <sup>8 9</sup>      | <sup>2 3</sup><br>6 | 7                   | <sup>3</sup><br>8 9 | <sup>1 2 3</sup><br>6 | <sup>1 2 3</sup><br>6 | <sup>3</sup><br>4   | <sup>2 3</sup><br>4 | <sup>2 3</sup><br>4 |
| 2                   | <sup>1 3</sup><br>7 | <sup>1 3</sup><br>7 | <sup>5</sup><br>7   | 4                     | 8                     | <sup>1 3</sup><br>7 | <sup>1 3</sup><br>6 | <sup>3</sup><br>5   |
| <sup>4 5</sup><br>7 | 9                   | <sup>4</sup><br>8   | 1                   | <sup>3</sup><br>7     | <sup>3</sup><br>5     | <sup>3</sup><br>4   | <sup>2 3</sup><br>4 | <sup>2 3</sup><br>5 |
| 6                   | <sup>1 3</sup><br>7 | <sup>1 3</sup><br>5 | 2                   | <sup>3</sup><br>7     | <sup>3</sup><br>5     | <sup>1 3</sup><br>7 | <sup>1 3</sup><br>4 | <sup>3</sup><br>5   |
| 3                   | <sup>1</sup><br>7   | <sup>5</sup><br>8   | 6                   | <sup>1</sup><br>7     | <sup>1</sup><br>8     | 2                   | <sup>4</sup><br>9   | <sup>4</sup><br>8   |
| <sup>4 5</sup>      | <sup>1 2</sup><br>8 | <sup>1 2</sup><br>6 | <sup>3</sup><br>4   | <sup>1 2 3</sup><br>8 | 9                     | <sup>1</sup><br>4   | <sup>3</sup><br>6   | <sup>3</sup><br>8   |
| <sup>4</sup><br>7   | <sup>1 2</sup><br>7 | <sup>1 2</sup><br>6 | <sup>3</sup><br>7   | <sup>1 2 3</sup><br>8 | <sup>1 2 3</sup><br>4 | 5                   | <sup>1</sup><br>4   | <sup>3</sup><br>6   |

|                     |                     |                     |                     |                     |                     |                       |                     |                       |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------|---------------------|-----------------------|
| <sup>1 3</sup><br>5 | <sup>2</sup><br>5   | 4                   | <sup>3</sup><br>7   | <sup>5 6</sup><br>9 | <sup>3</sup><br>7   | <sup>1 2 3</sup><br>4 | 8                   | 9                     |
| <sup>5</sup><br>7   | <sup>5</sup><br>8   | <sup>3</sup><br>7   | 1                   | <sup>4 5</sup><br>8 | 2                   | <sup>3</sup><br>4     | 6                   | <sup>3</sup><br>4     |
| <sup>1</sup><br>8   | <sup>3</sup><br>5   | 6                   | <sup>3</sup><br>9   | <sup>4 5</sup><br>8 | <sup>5</sup><br>8   | 7                     | <sup>2 3</sup><br>4 | <sup>1 2 3</sup><br>4 |
| 2                   | <sup>5 6</sup><br>7 | <sup>5 6</sup><br>9 | 8                   | <sup>5 6</sup><br>7 | 4                   | <sup>3</sup><br>6     | 1                   | <sup>3</sup><br>7     |
| <sup>6</sup><br>7   | 4                   | <sup>1</sup><br>7   | <sup>2 3</sup><br>7 | <sup>1 2</sup><br>6 | <sup>3</sup><br>9   | 5                     | <sup>2</sup><br>7   | <sup>2</sup><br>6     |
| <sup>5 6</sup><br>7 | 3                   | <sup>1</sup><br>7   | <sup>2</sup><br>7   | <sup>1 2</sup><br>6 | <sup>5 6</sup><br>9 | <sup>2</sup><br>4     | <sup>2</sup><br>6   | 8                     |
| <sup>4</sup><br>8   | <sup>6</sup><br>9   | <sup>6</sup><br>8   | <sup>2 3</sup><br>8 | <sup>2</sup><br>6   | 7                   | <sup>1</sup><br>4     | <sup>3</sup><br>6   | <sup>3</sup><br>4     |
| <sup>4</sup><br>7   | <sup>3</sup><br>8   | <sup>6</sup><br>9   | <sup>2 3</sup><br>7 | <sup>2</sup><br>6   | 5                   | <sup>2</sup><br>8     | 1                   | <sup>3</sup><br>4     |
| <sup>6</sup><br>7   | 1                   | 5                   | 4                   | 3                   | 9                   | 8                     | <sup>2</sup><br>7   | <sup>2</sup><br>6     |

|        |   |          |        |            |            |          |        |            |        |
|--------|---|----------|--------|------------|------------|----------|--------|------------|--------|
| 4<br>7 |   | 3<br>9   | 1<br>9 | 6          | 8          | 4<br>7   | 5      | 1<br>3     | 2      |
| 1<br>7 | 3 | 5        | 6<br>8 | 9          | 1 2 3<br>7 | 1 2<br>7 | 4      | 1<br>8     | 3<br>6 |
| 1<br>4 | 3 |          | 6<br>8 | 2          | 1<br>4     | 3<br>4   | 5      | 1<br>4     |        |
| 5      | 7 |          | 3<br>8 |            | 2 3<br>4   | 2 3<br>4 | 6<br>4 | 2<br>8     |        |
| 1<br>3 |   | 3<br>8 9 | 4      | 5          | 1<br>7     | 3<br>6   | 2      | 3<br>7 8   | 3<br>6 |
| 6      | 2 | 1<br>9   | 1<br>4 | 3<br>7     | 1<br>4     | 3<br>7   | 5      | 4<br>8     | 3      |
| 8      | 4 | 3<br>6   | 3<br>7 | 1<br>4     | 9          | 5        | 7      | 3<br>6     | 2      |
| 9      | 4 | 6        | 5      | 1 2<br>7 8 | 1 2<br>4   | 3<br>7   | 6      | 4<br>7 8   | 6      |
| 2      | 1 |          | 3<br>7 | 4          | 7 8        | 4        | 6      | 3<br>7 8 9 | 5      |

|            |              |            |            |        |          |            |        |            |              |
|------------|--------------|------------|------------|--------|----------|------------|--------|------------|--------------|
| 1 2<br>7   | 1 2<br>6     | 2<br>4     | 2<br>6     | 5      | 8        | 1 2 3<br>7 | 1<br>4 | 3<br>9     | 1<br>7       |
| 1 2<br>8   | 1 2<br>4     | 5<br>8 9   | 7          |        |          | 3<br>9     | 6      | 5<br>8 9   | 3<br>4 5     |
| 3          | 1<br>5       |            | 8 9        | 6      |          | 7          | 4      | 2          | 5<br>7 8 9   |
| 9          | 7            | 4<br>8     | 6<br>4     |        | 2        | 1<br>8     | 5      | 1<br>8     | 3            |
| 2<br>8     | 2 3<br>6     | 1<br>8     | 3<br>7 8   | 5      |          | 3<br>7 8 9 | 4      | 2<br>6     |              |
| 5          | 4<br>8       | 2 3<br>6   | 2 3<br>4   | 1<br>8 | 3<br>4   | 3<br>6     | 7      | 1<br>8 9   | 2<br>6       |
| 4          | 1<br>8       | 3<br>6     | 5          | 9      | 3<br>7   | 3<br>6     | 2      | 1<br>7 8   |              |
| 1 2<br>7 8 | 1 2 3<br>8 9 | 2 3<br>8 9 | 2 3<br>7 8 | 4<br>7 | 3<br>7   | 2 3<br>5   | 1<br>4 | 6          | 1<br>4 5     |
| 2<br>7 8   | 2<br>6       | 2<br>8 9   | 2<br>6     | 1      | 2<br>7 8 | 5<br>6     | 3      | 5<br>7 8 9 | 4 5<br>7 8 9 |

|        |        |            |              |          |              |          |          |            |   |
|--------|--------|------------|--------------|----------|--------------|----------|----------|------------|---|
| 8      | 4      | 5<br>9     | 3<br>7       | 1        | 3<br>7       | 3<br>5 6 | 5<br>6 9 | 2          |   |
| 7      | 2<br>6 | 1<br>5     | 2 3<br>4     | 2 3<br>4 | 2 3<br>6     | 8        | 1<br>5   |            | 3 |
| 1<br>9 | 3      | 2<br>6     |              | 5        | 2<br>8       | 2<br>9   | 1<br>4   |            | 4 |
| 1<br>4 |        | 4<br>7 8 9 | 2<br>4       | 5        | 1 2<br>8     | 6<br>9   | 3<br>4   | 6<br>8 9   |   |
| 6      | 5      | 1<br>4     | 3<br>8       | 9        | 7            | 2        | 4        | 8          |   |
| 4      | 3<br>9 |            | 2<br>8 9     | 7        | 4            | 3<br>8   | 5 6<br>9 | 4 5 6<br>9 | 1 |
| 5      | 1      | 4<br>7     | 3<br>9       | 6        | 2            | 8        | 7        | 9          | 3 |
| 4      |        | 6<br>9     | 2 3<br>7 8 9 | 4        | 1 2 3<br>8 9 | 1<br>7   | 3<br>9   |            | 5 |
| 2      | 3      |            | 1<br>7 8 9   | 5        | 4            | 1<br>7   | 6<br>9   | 6<br>7     | 9 |

|        |          |            |            |          |          |          |          |          |        |
|--------|----------|------------|------------|----------|----------|----------|----------|----------|--------|
| 1      | 2<br>7   | 5<br>6     | 2<br>4     | 5<br>6   | 2<br>7   | 9        | 2 3<br>4 | 2 3<br>5 | 3<br>6 |
| 2<br>4 | 2<br>7 8 | 2<br>5 6   | 2<br>7 8   | 2 3<br>4 | 2 3<br>5 | 2 3<br>8 | 3<br>4   | 2<br>6   | 1      |
| 4<br>7 | 2<br>8   | 3<br>4     | 5<br>8 9   | 6        | 1 2<br>5 | 1 2<br>4 | 4        | 7        | 8 9    |
| 4      | 3<br>7 8 | 1<br>7     | 3<br>8     | 9        | 5        | 6        | 2        |          | 3      |
| 5      | 9        | 4          | 2<br>8     | 6        | 4        | 1        | 3        | 7        |        |
| 2 3    | 1 2<br>6 | 1 2 3<br>6 | 1 2 3<br>5 | 7        | 2 3<br>5 | 8        | 9        | 4        |        |
| 6      | 2<br>5   | 2<br>8     | 7          | 1 2<br>5 | 1 2<br>5 | 3<br>9   | 4        |          | 3      |
| 9      | 4        | 2<br>5     | 2 3<br>5   | 8        | 7        | 1        | 6        |          |        |
| 7      | 3<br>7   | 1<br>7     | 1 3<br>7   | 9        | 4        | 6        | 2        | 8        | 5      |

|          |          |            |          |          |              |        |        |          |   |
|----------|----------|------------|----------|----------|--------------|--------|--------|----------|---|
| 4<br>7 8 | 2        | 4 5<br>7 8 | 4<br>7   | 3        | 1            | 6      | 7      | 4 5<br>9 |   |
| 1<br>4   | 6        | 4 5 6<br>7 | 1<br>4   | 2<br>7   | 9            | 3      | 8      | 4 5<br>7 | 2 |
| 9        | 4<br>7 8 | 6          | 3        | 5        | 4<br>7 8     | 6      | 4<br>8 | 1        |   |
| 4<br>7   | 3        | 4 5<br>7   | 3<br>9   | 8        | 2<br>7       | 9      | 6      |          |   |
|          | 3<br>7 8 | 1<br>7 8 9 | 6        | 2<br>8   | 5<br>8       | 3<br>7 | 4      | 2<br>7 9 |   |
| 2        | 4<br>8   | 6          | 4<br>8   | 9        | 7            | 1      | 5      | 3        |   |
| 1<br>4   | 3<br>7 8 | 1 2<br>7 8 | 1<br>7 8 | 3<br>7 8 | 4<br>8       | 5      | 6      | 4<br>7   | 2 |
| 4<br>7 8 | 3<br>6   | 4<br>7 8   | 3<br>6   | 2<br>7 8 | 4 5 6<br>7 8 | 3<br>4 | 1      | 2<br>7 9 |   |
| 5        | 4<br>7   | 6<br>7     | 1<br>7   | 4<br>9   | 2<br>7       | 3      | 8      |          |   |

|          |            |            |        |            |              |          |        |        |          |
|----------|------------|------------|--------|------------|--------------|----------|--------|--------|----------|
| 4<br>8   | 2<br>6     | 2<br>4     | 7      | 5          | 2<br>8 9     | 2<br>6   | 2<br>9 | 3<br>5 | 1        |
| 1        | 2 3<br>5 6 | 2 3<br>8   |        | 3<br>9     | 2 3<br>7 8 9 | 2 3<br>6 | 2<br>9 | 4      | 2<br>7 9 |
| 9        | 2 3<br>5   | 2 3        | 4      | 1 2 3<br>7 | 1 2 3<br>7   | 6        | 8      | 2<br>5 |          |
| 5        | 1 2 3<br>6 | 1 2 3<br>6 | 7      | 2 3<br>6   | 8            | 4        | 6<br>9 | 2<br>6 |          |
| 2<br>8   | 6          | 9          | 2<br>8 | 1          | 4            | 2<br>6   | 7      | 5      | 3        |
| 2 3<br>6 | 7          | 4          | 3<br>6 | 5          | 2 3<br>6     | 2<br>8 9 | 1      | 2<br>6 |          |
| 4        | 6          | 4          | 6      | 5          | 8            | 1<br>7   | 6<br>9 | 3      | 2        |
| 4        | 3<br>6     | 8          |        | 2<br>9     | 5            | 1<br>7   | 4<br>6 | 6<br>9 |          |
| 7        | 1 2 3<br>4 | 1 2 3<br>6 |        | 3<br>6     | 1<br>9       | 3<br>6   | 4<br>6 | 5<br>8 |          |

|     |         |       |     |   |     |   |     |     |     |     |       |   |
|-----|---------|-------|-----|---|-----|---|-----|-----|-----|-----|-------|---|
| 1   | 6       | 7 8 9 | 5   | 7 | 3   | 1 | 6   | 8   | 6   | 4   | 8 9   | 2 |
| 3   | 2       | 1     | 6   | 1 | 5 6 | 1 | 5 6 | 8 9 | 4   | 8 9 | 5 8 9 | 7 |
| 4   | 9 7 8 9 | 4     | 8 9 | 7 | 3   | 5 | 8 9 | 2   | 1   | 5   | 8 9   | 6 |
| 2   | 5 6     | 5     | 8 9 | 2 | 6   | 4 | 5 6 | 7   | 3   | 2   | 1 2   | 1 |
| 7   | 1       | 3     | 4   | 8 | 6   | 2 | 8   | 9   | 5   | 4   | 2     | 6 |
| 2   | 5 6     | 4     | 2   | 6 | 8   | 5 | 6   | 1   | 3   | 7   | 8 9   |   |
| 1 2 | 4 5     | 6     | 1 2 | 4 | 7   | 9 | 1   | 8   | 7 8 | 5   | 8     | 3 |
| 8   | 5       | 9     | 1 2 | 4 | 7   | 1 | 6   | 3   | 5 6 | 7   | 4     | 6 |
| 1   | 5       | 3     | 1   | 7 | 9   | 2 | 4   | 7 8 | 6   | 8 9 | 1     | 5 |

|     |     |     |     |     |   |     |   |   |     |     |     |     |   |     |     |
|-----|-----|-----|-----|-----|---|-----|---|---|-----|-----|-----|-----|---|-----|-----|
| 1 2 | 6   | 1 2 | 6   | 3   | 4 | 2   | 7 | 9 | 7   | 5 6 | 1 2 | 1 2 | 6 | 5 6 | 8 9 |
| 5   | 1 2 | 6   | 9   | 1 2 | 2 | 6   | 3 | 8 | 1 2 | 6   | 9   | 4   | 7 |     |     |
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|                 |                   |               |               |          |             |               |                    |             |                  |             |             |
|-----------------|-------------------|---------------|---------------|----------|-------------|---------------|--------------------|-------------|------------------|-------------|-------------|
| 1 2<br>5<br>8 9 | 2<br>4 5 6<br>8 9 | 2<br>4<br>8 9 | 7             | 3<br>8 9 | 1<br>5<br>9 | 1<br>4<br>9   | 3<br>6<br>8        | 1<br>4<br>9 | 3<br>6<br>8      | 1<br>4<br>9 | 3<br>6<br>8 |
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| 7 8<br>8        | 7 8               |               |               |          |             |               |                    |             |                  |             |             |
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|                 | 4                 | 3<br>8 9      | 6             | 2        | 5           | 1<br>8 9      | 1 3<br>4<br>9      | 7           | 1 3<br>4<br>9    |             |             |
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|                        |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                        |
|------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------------|
| <sup>2</sup><br>6<br>9 | 3                 | <sup>4</sup><br>8 | 1                 | <sup>2</sup><br>7 | <sup>4</sup><br>8 | <sup>6</sup><br>8 | 5                 | <sup>4</sup><br>7 | <sup>8</sup><br>9 | <sup>4</sup><br>7 | <sup>8</sup><br>9      |
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| <sup>1</sup><br>5      | 6                 | 5                 | 6                 | 7                 | <sup>5</sup><br>6 | <sup>4</sup><br>5 | 6<br>8            | 9                 | 2                 | 3                 | <sup>1</sup><br>4<br>8 |
| 7                      | 1                 | 6                 | <sup>5</sup><br>8 | 3                 | 2                 | 4                 | <sup>5</sup><br>8 | 9                 |                   |                   |                        |
| 4                      | <sup>2</sup><br>9 | 5                 | 7                 | <sup>1</sup><br>8 | <sup>6</sup><br>9 | <sup>1</sup><br>8 | <sup>6</sup><br>6 | <sup>3</sup><br>6 | <sup>1</sup><br>2 | <sup>8</sup><br>6 | <sup>1</sup><br>3      |
| 3                      | 8                 | <sup>2</sup><br>9 | 4                 | <sup>1</sup><br>5 | <sup>6</sup><br>9 | <sup>1</sup><br>5 | <sup>6</sup><br>6 | <sup>7</sup><br>6 | <sup>1</sup><br>2 | <sup>5</sup><br>6 | <sup>1</sup><br>5      |
| <sup>2</sup><br>5      | <sup>6</sup><br>9 | <sup>2</sup><br>5 | <sup>6</sup><br>9 | <sup>1</sup><br>2 | <sup>3</sup><br>9 | <sup>2</sup><br>5 | <sup>6</sup><br>9 | <sup>3</sup><br>6 | <sup>4</sup><br>5 | <sup>6</sup><br>9 | <sup>4</sup><br>5      |
| 8                      | 4                 | <sup>2</sup><br>3 | <sup>2</sup><br>5 | <sup>6</sup><br>9 | <sup>5</sup><br>6 | 7                 | 1                 | <sup>5</sup><br>6 | <sup>9</sup><br>9 | <sup>5</sup><br>3 |                        |
| <sup>5</sup><br>6      | <sup>9</sup><br>7 | <sup>5</sup><br>6 | <sup>9</sup><br>9 | <sup>1</sup><br>3 | <sup>5</sup><br>6 | <sup>9</sup><br>9 | <sup>1</sup><br>4 | <sup>5</sup><br>6 | <sup>1</sup><br>3 | <sup>5</sup><br>6 | 2                      |

|                 |                   |                 |                     |               |                 |                 |                               |
|-----------------|-------------------|-----------------|---------------------|---------------|-----------------|-----------------|-------------------------------|
| 1 2<br>4 5 6    | 1 4<br>6 8        | 1 2<br>4 6<br>8 | 3<br>4 6            | 7             | 1 2<br>5 6<br>8 | 2 4<br>5 8      | 9                             |
| 1<br>4 5 6<br>9 | 1<br>4 6<br>7     | 1<br>4 6<br>7   | 4 6<br>8            | 2<br>4 6<br>8 | 3               | 4 5             | 1<br>4 5 6                    |
| 4<br>2<br>6     | 4 6<br>8          | 3               | 9                   | 1             | 5               | 2<br>6<br>8     | 7<br>4 6<br>8                 |
| 1<br>4 6<br>9   | 3 1<br>6 4<br>8 9 | 1 3<br>4 6<br>8 | 1<br>4 5 6<br>7     | 4 5 6<br>7    | 2               | 5 6<br>9        | 3 4<br>5 9<br>4 5 6           |
| 1<br>4 6<br>9   | 3 1<br>4 6<br>9   | 1 3<br>4 6<br>9 | 1<br>4 5 6          | 8             | 1<br>4 6        | 7               | 2 3<br>4 5<br>9<br>4 5 6      |
| 7               | 2                 | 5               | 4 6                 | 9             | 3               | 6<br>8          | 1<br>4 8<br>6                 |
| 1 2 3<br>4 6    | 1 3<br>4 6<br>7   | 1 2<br>4 6<br>7 | 1 2<br>4 5 6<br>7 8 | 4 5 6<br>7    | 1<br>4 6<br>8 9 | 1 2<br>5 8<br>9 | 2 1<br>5 8<br>9<br>1 2<br>5 8 |
| 8               | 1<br>6            | 9               | 2<br>5              | 3             | 1<br>6          | 4               | 2<br>5<br>7                   |
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|   |     |   |   |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|-----|---|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 1 2 | 6 | 9 | 2 3 | 7 | 1 | 5 | 9 | 3 | 1 | 2 | 5 | 6 | 9 | 1 | 2 | 5 | 9 | 4 |   |   |
| 1 | 3   | 4 | 7 | 9   | 5 | 4 | 8 | 6 | 1 | 3 | 1 | 3 | 4 | 9 | 6 | 1 | 2 | 1 | 3 | 9 |   |
| 1 | 3   | 4 | 7 | 9   | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 9 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 5   | 6 | 3 | 2   | 9 | 7 | 1 | 5 | 6 | 4 | 1 | 2 | 3 | 8 |   |   |   |   |   |   |   |
| 1 | 6   | 9 | 8 | 9   | 8 | 9 | 1 | 6 | 4 | 3 | 7 | 1 | 2 | 5 | 8 |   |   |   |   |   |   |
| 1 | 4   | 5 | 7 | 8   | 1 | 2 | 3 | 4 | 5 | 6 | 9 | 8 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 4 | 5   | 9 | 8 | 9   | 6 | 2 | 1 | 5 | 9 | 7 | 4 | 5 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2 | 4   | 8 | 9 | 5   | 6 | 3 | 1 | 4 | 5 | 9 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |   |
| 4 | 5   | 9 | 7 | 1   | 4 | 5 | 8 | 9 | 6 | 3 | 2 | 1 | 5 | 9 | 8 | 7 | 1 | 2 | 3 | 4 | 5 |



|                  |                  |                  |             |               |                    |                    |                 |               |
|------------------|------------------|------------------|-------------|---------------|--------------------|--------------------|-----------------|---------------|
| 2<br>5<br>8      | 7                | 2<br>4<br>5<br>8 | 6           | 1 2<br>4<br>9 | 1<br>4<br>9        | 3                  | 1<br>4<br>8 9   | 1 2<br>5<br>9 |
| 9                | 6                | 2<br>4<br>5<br>8 | 4<br>7      | 1 2<br>4      | 3                  | 2<br>4<br>5<br>7 8 | 1<br>4<br>7 8   | 1 2<br>5<br>7 |
| 1                | 4                | 2<br>3           | 3           | 5             | 8                  | 4<br>7<br>9        | 4<br>7<br>9     | 6             |
| 2 3<br>6<br>7    | 1 2<br>4<br>8    | 9                | 4<br>7 8    | 3<br>5        | 1<br>4<br>6<br>7 8 | 2<br>7 8           | 3<br>6<br>7     | 2 3           |
| 5<br>6<br>7      | 3<br>4<br>5<br>8 | 4<br>5<br>6<br>7 | 4<br>7 8 9  | 3<br>4<br>9   | 2                  | 1                  | 3<br>6<br>7 8 9 | 3             |
| 2 3<br>6<br>7    | 1 2<br>4<br>8    | 2<br>6           | 3<br>7 8 9  | 1<br>3<br>9   | 1<br>6             | 2<br>7 8 9         | 5<br>4          | 4             |
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|                  |             |                  |                         |                  |                    |                  |                  |                       |
|------------------|-------------|------------------|-------------------------|------------------|--------------------|------------------|------------------|-----------------------|
| 5<br>8           | 3<br>4      | 3<br>8           | 2                       | 1<br>8 9         | 6                  | 1<br>8 9         | 7                | 5<br>9                |
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| 5<br>6<br>7 8    | 2<br>6<br>9 | 2<br>7 8         | 1<br>5<br>7 9           | 3<br>4           | 1<br>2<br>6<br>8 9 | 2<br>9           | 2<br>5<br>6<br>9 | 9                     |
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| 2                | 7           | 5                | 8                       | 4<br>6           | 9                  | 4<br>6           | 1                | 3                     |
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| 9                | 5           | 2<br>4<br>7 8    | 3<br>4<br>7             | 2<br>3           | 4<br>7 8           | 2<br>3<br>4      | 6                | 1                     |

|               |                    |                  |                  |               |                  |                  |                  |                  |
|---------------|--------------------|------------------|------------------|---------------|------------------|------------------|------------------|------------------|
| 1 2<br>7      | 3                  | 2<br>5           | 1 2<br>5 6<br>7  | 4             | 1 2<br>6<br>7    | 9                | 8                | 1<br>5 6         |
| 1 2<br>4<br>8 | 6                  | 2<br>4<br>5<br>8 | 1 2<br>5         | 3             | 9                | 7                | 4<br>5           | 1<br>4<br>5      |
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| 1 2<br>4<br>7 | 1 2<br>4<br>7      | 2<br>3<br>4<br>9 | 8                | 1 2<br>6<br>7 | 5                | 3<br>4<br>6<br>7 | 2<br>4<br>6<br>9 | 6                |
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| 4             | 4<br>8 9           | 7                | 1<br>6           | 5             | 1<br>4<br>6<br>8 | 2                | 6<br>9           | 3                |

|               |             |                  |                  |                 |               |             |                       |               |
|---------------|-------------|------------------|------------------|-----------------|---------------|-------------|-----------------------|---------------|
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|             |                  |             |               |            |               |             |        |             |
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| 1           | 4                | 3<br>9      | 2 3<br>7      | 5          | 2 3<br>7 9    | 6           | 8<br>9 | 3<br>8      |
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|             |                  |                  |             |                  |        |                         |                    |                  |
|-------------|------------------|------------------|-------------|------------------|--------|-------------------------|--------------------|------------------|
| 1<br>9      | 1<br>3<br>6<br>8 | 7                | 2           | 4<br>5<br>6<br>9 | 3<br>6 | 1<br>5<br>6<br>8 9      | 1<br>4<br>6<br>8 9 | 4<br>5<br>6<br>8 |
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| 4           | 1<br>3<br>6      | 1<br>3<br>6<br>9 | 5<br>7      | 5<br>6<br>9      | 8      | 1<br>2<br>5<br>6<br>7 9 | 1<br>6<br>9        | 2<br>5<br>6      |
| 8           | 4                | 5                | 1<br>9      | 1<br>3<br>6<br>9 | 3<br>6 | 1 2<br>7                | 1<br>6             | 2<br>6           |
| 1<br>7      | 1<br>3<br>7      | 1<br>3<br>7      | 4<br>8      | 4<br>6<br>8      | 2      | 8                       | 6<br>5             | 9                |
| 6           | 9                | 2                | 1<br>8      | 7                | 5      | 3                       | 1<br>4<br>8        | 4<br>8           |
| 3           | 1<br>7 8         | 1<br>4<br>8 9    | 1<br>5<br>8 | 2<br>7           | 4<br>9 | 5<br>6<br>8 9           | 6<br>8 9           | 5<br>6<br>8      |
| 1<br>5<br>9 | 2                | 1<br>4<br>8 9    | 6           | 1<br>5<br>8      | 4<br>9 | 5<br>8 9                | 3                  | 7                |
| 5<br>7 8    | 6<br>8 9         | 6<br>8 9         | 3           | 5<br>8           | 7<br>9 | 4                       | 2                  | 1                |



|              |              |              |              |              |              |                |            |              |
|--------------|--------------|--------------|--------------|--------------|--------------|----------------|------------|--------------|
| 2 3<br>5 9   | 2 3<br>4     | 7            | 1 3<br>9     | 2 3<br>4 9   | 8            | 1 2<br>4 5 9   | 6          | 1 2 3<br>4 9 |
| 1            | 2 3<br>4 6   | 2 3<br>6 9   | 3<br>7 9     | 5            | 2 3<br>4 9   | 2<br>4 7 9 7 9 |            | 8            |
| 2 3<br>8 9   | 2 3<br>4 8   | 2 3<br>5 8 9 | 6            | 2 3<br>4 7 9 | 1 2 3<br>4 9 | 1 2<br>4 9     | 1<br>5 4   | 1 2 3<br>7 9 |
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|--------------|------------|------------|--------------|--------------|--------------|--------------|----------|--------------|
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|   | 8 | 9 | 8 |   |   |   |   | 8 |   |   |   |   |
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| 3 | 2 | 3 | 2 | 3 | 1 |   |   | 9 | 4 | 5 |   |   |
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| 1 | 9 |   | 3 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
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| 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 |
| 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6 | 4 | 6 | 3 | 1 | 2 | 4 | 5 | 9 | 7 | 2 | 5 | 4 | 5 | 6 |
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| 4 | 7 | 8 | 9 | 1 | 2 | 3 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 |
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
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|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
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| 4 | 3 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 |
| 6 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 |
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|   |     |       |     |       |     |       |       |     |     |
|---|-----|-------|-----|-------|-----|-------|-------|-----|-----|
| 4 | 6   | 4 5 6 | 5 6 | 2     | 3   | 2     | 9     | 2   | 1   |
| 1 | 2   | 8     | 4   | 9     | 6   | 7 5   | 3     | 7 5 |     |
| 7 |     | 3     | 3   | 5     | 1 2 | 1 2   | 2     | 2   | 2   |
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| 9 | 1   | 2 3   | 2 3 | 5     | 2 3 | 2 3   | 7     | 2 3 | 6   |
| 2 |     | 5     | 1 2 | 1 2 3 | 1 2 | 1 2 3 | 6     | 1 2 | 4   |
| 8 | 7   | 9     | 7   | 9     | 8   | 8 9   | 6     | 8 9 |     |
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| 3     | 4     | 6   | 3 | 1     | 3     | 1   | 3     | 1   | 3   |
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| 2 3   | 2     |     | 3 | 1 2 3 | 1 2 3 | 1   | 3     | 8   | 4   |
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| 2     |       |     |   | 2     | 6     | 4   | 3     | 4   |     |
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| 7     | 8     | 8   | 6 | 7     | 6     | 7 8 | 7     | 6   | 9   |
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| 8 9   | 8 9   | 8 9 |   |       |       | 9   | 2     | 6   | 7   |
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| 6     | 3     | 1   | 4 | 4     | 2     | 4   | 6     | 5   | 6   |

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| 1 2   | 8     | 2     | 4     | 2     | 3     | 1 2   | 1     |       | 9     |
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| 8 9   | 8 9   | 8 9   | 8 9   | 8 9   | 8 9   | 8 9   | 8 9   | 8 9   | 8 9   |
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| 7 8   | 7 8   | 7 8   | 7 8   | 7 8   | 7 8   | 7 8   | 7 8   | 7 8   | 7 8   |
| 2 3   | 3     | 2 3   | 3     | 4     | 1 2   | 1     | 5     | 1     | 6     |
| 7 8   | 7     | 7 8   | 8 9   | 6     | 8 9   | 7     | 9     | 7 8   | 6     |

|       |   |     |   |   |   |       |       |     |   |
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| 1     | 5 | 3   | 1 | 7 | 5 | 2     |       | 4   | 6 |
| 2     | 5 | 4   | 5 | 3 | 5 | 6     | 7     | 8   | 1 |
| 6     | 2 | 7   | 1 | 9 | 4 |       | 3     | 5   |   |
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| 7     | 7 | 3   | 5 | 8 | 7 | 9     | 6     | 4   |   |
| 4     | 2 | 2   | 2 | 1 | 6 | 3     | 2     | 3   |   |
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| 7     | 7 |     |   |   |   | 7 8 9 | 7 8 9 | 7 9 |   |
| 5     | 4 | 5   | 4 | 5 | 8 | 1     | 5     | 6   | 3 |
| 9     | 2 | 2   | 1 | 3 | 7 | 4     | 5     | 6   | 7 |

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| 3 | 1   | 2 3 | 2   | 8 | 5 | 3   | 6 | 2 3 |   |
| 7 | 9   | 7   | 9   | 7 | 9 | 7   | 9 | 7   | 4 |
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| 1 | 3   | 6   | 4   | 3 | 5 | 1   | 3 | 2   |   |
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| 1<br>4 | 3<br>5<br>7 | 3<br>5<br>8 | 2<br>3<br>5 | 4<br>5<br>8 | 2<br>3<br>5 | 1<br>2<br>3<br>5 | 1<br>5<br>8      | 3<br>7      | 1<br>2<br>3<br>6 |
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|            |        |              |                   |                   |              |            |              |            |
|------------|--------|--------------|-------------------|-------------------|--------------|------------|--------------|------------|
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| 1 4<br>6 9 | 1<br>4 | 1 4<br>6 9   | 1 5<br>8 9        | 4 5<br>8 8        | 7            | 5 6<br>8   | 3            | 2          |

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|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|--------|--------|
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|        |        |        |        |        |        |        |        |        |        |   |
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|--------|--------|--------|--------|--------|---|---|---|--------|---|---|
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| 1<br>2 | 3      | 1      | 2      | 6      | 2 | 3 | 1 | 5      | 1 | 5 |
| 1      | 4      | 1      | 4      | 6      | 4 | 6 | 3 | 7      | 6 | 2 |
| 2<br>3 | 4      | 2      | 1      | 4      | 5 | 3 | 2 | 5      | 6 | 8 |
| 6      | 9      | 4      | 2      | 3      | 1 | 3 | 1 | 2      | 7 | 5 |
| 5      | 4      | 2      | 4      | 7      | 8 | 9 | 1 | 4      | 3 | 6 |

|   |   |   |                      |   |                    |   |                      |                    |
|---|---|---|----------------------|---|--------------------|---|----------------------|--------------------|
| 1 | 4 | 6 | <small>7 9</small>   | 3 | 5                  | 8 | <small>2 7 9</small> | <small>2</small>   |
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| 7 | 6 | 5 | 8                    | 1 | 2                  | 3 | 4                    | 9                  |
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|                        |                        |                          |                          |                          |                          |                            |                        |                      |
|------------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|------------------------|----------------------|
| <small>1 8 9</small>   | <small>1 4 9</small>   | <small>3 4 8 9</small>   | <small>4 5 8</small>     | <small>3 1 4 5 8</small> | 6                        | <small>1 5 9</small>       | 2                      | 7                    |
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| <small>1 6 9</small>   | <small>1 2 6 9</small> | 3                        | <small>2 4 6 4</small>   | <small>2 6</small>       | 5                        | <small>1 6</small>         | 7                      | 8                    |
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|                          |                          |                        |                        |                        |                        |                        |                          |                        |
|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--------------------------|------------------------|
| 9                        | <small>3 5 6 8</small>   | <small>3 4 6 8</small> | 7                      | <small>3 4 6 8</small> | <small>2 4 6 8</small> | 1                      | <small>2 3 4 5 8</small> | <small>3 4 5</small>   |
| <small>4 5 6 8</small>   | 2                        | <small>3 4 6 8</small> | <small>3 6 8 9</small> | 1                      | <small>4 6 8 9</small> | <small>4 5 8 9</small> | 7                        | <small>3 8 9</small>   |
| <small>4 7 8</small>     | <small>3 7 8</small>     | 1                      | 5                      | <small>3 4 9</small>   | <small>2 4 8 9</small> | 6                      | <small>2 3 4 9</small>   | <small>3 4 9</small>   |
| <small>4 7 8</small>     | <small>3 7 8 9</small>   | <small>2 3 7 8</small> | <small>1 2 8 9</small> | <small>4 7 9</small>   | <small>4 7 8 9</small> | 5                      | 6                        | <small>1 3 4 9</small> |
| <small>4 5 6 7 8</small> | <small>5 6 4 7 8</small> | <small>4 6 7 8</small> | <small>1 6 8 9</small> | <small>4 6 7 9</small> | 3                      | 2                      | <small>4 7 9</small>     | <small>1 4 9</small>   |
| 1                        | <small>3 6 4 9</small>   | <small>2 3 6 7</small> | <small>2 6 9</small>   | 5                      | <small>4 6 7 9</small> | <small>4 7 9</small>   | 8                        | <small>3 7 9</small>   |
| 2                        | 4                        | <small>6 7</small>     | <small>6 9</small>     | 8                      | 1                      | 3                      | <small>5 7 9</small>     | <small>5 9</small>     |
| 3                        | 1                        | 5                      | 4                      | 2                      | <small>7 9</small>     | <small>7 8 9</small>   | <small>7 8 9</small>     | 6                      |
| <small>6 7 8</small>     | <small>6 7 8</small>     | 9                      | <small>3 6 7</small>   | <small>3 6</small>     | 5                      | 4                      | 1                        | 2                      |

|                        |                        |                      |                        |                        |                        |                        |                          |                      |
|------------------------|------------------------|----------------------|------------------------|------------------------|------------------------|------------------------|--------------------------|----------------------|
| 8                      | 9                      | <small>1 2</small>   | 5                      | <small>3 6</small>     | <small>3 6</small>     | <small>1 2</small>     | 7                        | 4                    |
| <small>1 2 5 7</small> | <small>1 2 4 7</small> | <small>1 2 5</small> | <small>2 4</small>     | 9                      | 8                      | 3                      | <small>1 2 5</small>     | 6                    |
| <small>2 5 6</small>   | <small>2 4 6</small>   | 3                    | <small>2 4</small>     | 7                      | 1                      | <small>2 5 8 9</small> | <small>2 5 8 9</small>   | <small>5 8 9</small> |
| <small>1 4 5 7</small> | 3                      | <small>1 4 5</small> | <small>1 9</small>     | <small>5 6 7</small>   | <small>5 6 8 9</small> | <small>6 8 9</small>   | <small>6 8 9</small>     | 2                    |
| 9                      | <small>2 7</small>     | 6                    | 3                      | 8                      | <small>2 7</small>     | <small>1 5 6 9</small> | 4                        | <small>1 5</small>   |
| <small>1 2 5</small>   | <small>1 2</small>     | 8                    | <small>1 9</small>     | 4                      | <small>2 5 6</small>   | <small>6 9</small>     | 3                        | 7                    |
| <small>1 2 3 6</small> | <small>1 2 6 8</small> | 7                    | <small>6 8</small>     | <small>2 3 5</small>   | <small>3 5</small>     | 4                      | <small>1 2 6 8 9</small> | <small>1 8 9</small> |
| <small>1 2 3 4</small> | <small>1 2 4 6</small> | 5                    | <small>1 2 4 8</small> | <small>2 3 6 8</small> | 9                      | 7                      | <small>1 2 6 8</small>   | <small>1 8</small>   |
| <small>2 6</small>     | <small>2 6 8</small>   | 9                    | 7                      | 1                      | 4                      | <small>2 5 6 8</small> | <small>2 5 6 8</small>   | 3                    |

|                        |                          |                        |                              |                            |                          |                          |                          |                        |
|------------------------|--------------------------|------------------------|------------------------------|----------------------------|--------------------------|--------------------------|--------------------------|------------------------|
| 3                      | 8                        | <small>1 7 6</small>   | 5                            | <small>1 7 6</small>       | <small>1 7</small>       | 4                        | 2                        | 9                      |
| <small>1 2 7 9</small> | <small>1 6 9</small>     | 5                      | <small>1 7 6 9</small>       | 4                          | <small>1 2 7 8 9</small> | <small>1 6 7 8</small>   | 3                        | <small>1 7 8</small>   |
| <small>1 2 7 9</small> | <small>6 7 9</small>     | 4                      | <small>1 3 6 7 9</small>     | <small>1 2 6 7 8 9</small> | 5                        | <small>1 6 7 8</small>   | <small>1 6</small>       | <small>6 7 8</small>   |
| <small>1 5 6 7</small> | 2                        | 8                      | 4                            | <small>1 5 6 7</small>     | <small>1 3 7 9</small>   | <small>1 5 6 7 9</small> | <small>1 3 5 6</small>   | <small>1 3 5 6</small> |
| <small>1 5 6 7</small> | <small>1 3 5 7 6</small> | <small>1 3 6 7</small> | <small>1 3 1 2 5 6 7</small> | <small>1 2 3 5 6 7</small> | <small>1 6 7 9</small>   | 8                        | 4                        |                        |
| 4                      | <small>1 3 5</small>     | 9                      | <small>1 3 6 7</small>       | 8                          | <small>1 3 5 7</small>   | 2                        | <small>1 5 6 7</small>   | <small>1 3 5 6</small> |
| <small>1 2 5 9</small> | 7                        | <small>1 2 3</small>   | 8                            | <small>1 5 3</small>       | 6                        | <small>1 9</small>       | 4                        | <small>1 5</small>     |
| <small>1 5 9</small>   | <small>1 3 5 9</small>   | <small>1 3</small>     | 2                            | <small>1 5 3 7</small>     | 4                        | <small>1 6 7 8 9</small> | <small>1 5 6 7 8</small> | <small>1 5 6</small>   |
| 8                      | 6                        | 4                      | <small>1 7</small>           | 9                          | <small>1 5 7</small>     | 3                        | <small>1 5 7</small>     | 2                      |

|                          |                          |                            |                      |                          |                        |                            |                              |                          |
|--------------------------|--------------------------|----------------------------|----------------------|--------------------------|------------------------|----------------------------|------------------------------|--------------------------|
| 3                        | <small>4 5 6 8</small>   | <small>2 4 5 6</small>     | 1                    | <small>2 4 6 8</small>   | <small>2 6</small>     | 9                          | 7                            | <small>2 4 5 6</small>   |
| <small>2 4 5 6 7</small> | <small>1 4 5 6 7</small> | <small>1 2 4 5 6 7</small> | 9                    | <small>2 4 6 7</small>   | <small>3 7</small>     | 8                          | <small>1 2 3 6 4 5 6</small> | <small>1 2 4 5 6</small> |
| <small>2 4 8</small>     | <small>1 4 6 7 8</small> | 9                          | 5                    | <small>2 4 6 8 7</small> | <small>3 4 6</small>   | <small>1 2 3 6 4 6</small> | <small>1 2 6 4 6</small>     |                          |
| 7                        | <small>3 4 6 4 6</small> | <small>3 4 6</small>       | <small>2 1 8</small> | <small>1 5 7</small>     | <small>1 5 4 6</small> | <small>3 8</small>         | <small>2 1 6 4 8 6</small>   | 9                        |
| <small>4 5 6</small>     | 2                        | <small>1 4 5 6</small>     | <small>6 8</small>   | 3                        | 9                      | 7                          | <small>1 6 8</small>         | <small>1 4 8 6</small>   |
| <small>6 9</small>       | <small>1 3 6 9</small>   | 8                          | <small>2 6</small>   | 7                        | 4                      | <small>1 3 6</small>       | 5                            | <small>1 2 3 6</small>   |
| <small>2 6 9 7</small>   | <small>3 7</small>       | <small>3 7</small>         | 4                    | <small>2 6 9</small>     | <small>2 6</small>     | 5                          | <small>1 8</small>           | <small>1 8</small>       |
| 1                        | <small>4 5 7 8 9</small> | <small>2 4 5</small>       | 7                    | <small>2 5</small>       | 8                      | <small>3 6</small>         | 9                            | <small>3 6</small>       |
| <small>5 6 8 9</small>   | <small>5 6 8 9</small>   | <small>5 6</small>         | 3                    | <small>1 5 6 9</small>   | <small>1 5</small>     | 2                          | 4                            | 7                        |



|     |       |     |         |     |       |       |       |       |
|-----|-------|-----|---------|-----|-------|-------|-------|-------|
| 1   | 7     | 2   | 9       | 4 5 | 4 5   | 3     | 8 6   | 8 6   |
| 4 3 | 5     | 4 3 | 2       | 1 3 | 6     | 1 5   | 1 4 5 | 1 4 5 |
| 4 3 | 5     | 4 3 | 8       | 1 3 | 7     | 1 5   | 1 4 5 | 2     |
| 2 3 | 2 3   | 7   | 4       | 8   | 1 2 3 | 1 5 6 | 1 5   | 1 3   |
| 9   | 4     | 3 6 | 5       | 7 6 | 1 3   | 2     | 1 3   | 1 3   |
| 5   | 2 3   | 1   | 3 6     | 2 6 | 2 3   | 6 4   | 4 3   | 4 6   |
| 7   | 1 4 3 | 3 6 | 2 4 5 6 | 4 5 | 6     | 2 6   | 9     |       |
| 4 2 | 6     | 9   | 7       | 4 2 | 8     | 1 5   | 3 1   | 5     |
| 2 3 | 2 3   | 5   | 1       | 2 6 | 2 3   | 4     | 2 6   | 7     |

|       |       |     |           |           |       |         |       |       |
|-------|-------|-----|-----------|-----------|-------|---------|-------|-------|
| 2 4 5 | 6     | 9   | 4 5 8     | 1 4 5     | 7     | 2 3 5   | 4 8   | 3     |
| 4 5   | 5     | 1   | 4 5 7 8   | 2         | 9     | 4 8     | 5 8   | 6     |
| 3     | 2 5   | 4 2 | 4 5 6 7 8 | 4 5 6 7 8 | 4 5 8 | 9       | 1 2 5 | 1 4 8 |
| 1 2   | 1 2 3 | 5   | 1 2 4     | 3 4       | 7     | 1 2 3 4 | 1 3 4 | 1 3   |
| 1 2   | 6 9   | 4   | 2 8       | 1 2 5 8   | 3 5 8 | 1 2 3 6 | 7 8 9 | 1 3   |
| 1 2   | 1 2 3 | 2   | 9         | 4 3       | 6     | 1 2 3 4 | 1 3   | 5     |
| 1 2   | 1 2   | 3   | 1 2 6     | 8 9       | 5     | 4 7     | 5     | 4 7   |
| 1 2   | 4 5   | 7   | 4 2       | 1 2 5     | 5     | 3       | 1 8   | 6 8 9 |
| 8     | 1 5   | 6   | 1 4 5 7   | 4 5 7 9   | 1 4 5 | 1 3 1   | 3 9   | 2     |

|           |         |         |           |       |           |         |     |     |
|-----------|---------|---------|-----------|-------|-----------|---------|-----|-----|
| 2         | 6       | 2       | 4 5       | 9     | 4 5       | 2       | 1   | 3   |
| 7 8       | 4       | 1 2     | 1 3 5 6   | 7     | 1 2 3 5 6 | 2 5 9   | 2 5 | 8   |
| 3         | 1 2     | 5       | 1 6       | 8     | 1 2 6     | 2 6 4   | 4 9 | 2   |
| 4 5 6 8 9 | 5 3     | 4 6     | 4 5 8     | 5 3   | 7         | 1 4 8 9 | 4 2 | 2 9 |
| 1         | 5 3     | 4 3     | 2 6 4 5 8 | 3     | 8 9       | 7       | 4   | 9   |
| 4 2       | 2       | 2       | 9         | 1 4   | 8         | 3       | 6   | 5   |
| 2 5 6     | 8       | 9       | 1 5 6     | 2 5   | 1 5 6     | 4       | 3   | 2 7 |
| 2 5       | 1 2 3 5 | 1 2 3   | 7         | 4 5 8 | 3         | 2 5 8 9 | 2 5 | 6   |
| 2 4 5 6   | 2 3 5   | 2 3 4 6 | 3 5 6 8   | 2 3 5 | 9         | 2 5 7 8 | 2 5 | 1   |

|       |     |     |         |       |           |       |           |           |
|-------|-----|-----|---------|-------|-----------|-------|-----------|-----------|
| 2     | 6   | 2 3 | 1 2 3 4 | 5     | 1 4       | 7     | 1 3 4     | 1 3       |
| 1     | 2   | 2 3 | 2 3 4   | 6     | 4 9       | 8     | 5         |           |
| 5     | 5   | 4   | 1 3 8   | 9     | 7 8       | 2     | 6         | 1 3       |
| 3     | 4 2 | 5   | 1 4 8   | 6     | 1 4 7 8 9 | 4 8 9 | 4 2       | 4 7 8 9   |
| 7 8 9 | 1   | 7 9 | 4 5 8   | 2     | 4 7 8 9   | 3     | 4 5 7 8 9 | 4 6 7 8 9 |
| 2     | 2   | 2   | 4 5 8   | 4     | 7 8       | 3     | 1 4 5 7 9 | 4 6 7 8 9 |
| 2 5   | 3   | 1 2 | 1 4 8   | 7     | 2 4 5 8   | 6     | 1 4 9     | 1 4 8 9   |
| 4     | 5   | 1   | 6 1 3   | 8     | 5 8       | 5 8 9 | 1 3 7 9   | 2         |
| 6     | 2 5 | 8   | 9       | 1 3 4 | 2 4 5     | 4 5   | 1 3 4 7   | 1 3 4 7   |

|           |       |         |         |       |           |           |           |       |
|-----------|-------|---------|---------|-------|-----------|-----------|-----------|-------|
| 1 2 5 8 9 | 3     | 4 5 7 8 | 6       | 4 5   | 4 9       | 1 7 8 9   | 1 2 7 8 9 | 7 8 9 |
| 1 2 5 9   | 1 2   | 4 5     | 4 5 8   | 7     | 1 3 6 9   | 1 2 6 9   | 6         | 6 9   |
| 2         | 2     | 6       | 2 3     | 1     | 2 3       | 3 7 8 9   | 5         | 4     |
| 1 3 5 9   | 1 6   | 5 7     | 1 2 4 5 | 8     | 4 5 6 9   | 4 6 7 9   | 5 6       | 7 9   |
| 5 3       | 2     | 4 5 9   | 4 5 3   | 6     | 4 5 7 8 9 | 4 7 8 9   | 1         |       |
| 4         | 1 6   | 5 8     | 1 5 9   | 7     | 1 9       | 2 6 8 9   | 3         |       |
| 7         | 4 5   | 3       | 8       | 4 6 4 | 1 2       | 1 4 5 6 9 | 1 4 6 9   | 5 6 9 |
| 2         | 4 8   | 9       | 1 2 4 7 | 2 6   | 5         | 1 4 6 7 8 | 3 7 8     | 6     |
| 6         | 4 5 8 | 1       | 4 7 3   | 9     | 4 3       | 4 5 7 8   | 4 7 8     | 2     |

|           |         |         |           |           |           |           |           |         |
|-----------|---------|---------|-----------|-----------|-----------|-----------|-----------|---------|
| 1 2 7 8 9 | 3       | 2 7 8 6 | 5         | 1 2 7 9   | 4         | 7 6 9     | 1 8 6     | 1 7 8 9 |
| 1         | 1 5 6   | 4       | 3         | 1 7       | 2         | 5 6 7 9   | 1 5 7 8 9 |         |
| 1 2       | 1       | 2 5     | 8         | 1 2 7 9   | 6         | 4 3 1 4 5 | 1 3 7 9   |         |
| 3         | 2       | 5 7 8   | 1         | 4 9       | 3         | 5 8       | 6         |         |
| 6         | 4 7 8   | 9       | 2         | 5 7       | 3         | 1 4 8     | 7 8       | 3       |
| 4 3       | 4 5 7   | 1       | 3 6 7     | 6 8       | 4 5 7     | 2 3 5     | 2 3 7     |         |
| 1 2 4 7   | 1 4 6   | 3       | 4 6 7 9   | 1 6 9     | 5         | 8         | 1 6 9     | 1 2 9   |
| 1 2 4 8   | 1 4 8 6 | 2 6 8 9 | 3 1 6 9   | 1 2 3 8 9 | 2 3 5 6 9 | 7         | 1 2 3 5 9 |         |
| 5         | 9       | 2 6 7   | 3 1 6 7 8 | 1 2 3 7   | 2 3 1 3 6 |           | 4         |         |

|           |           |               |             |           |       |         |         |         |
|-----------|-----------|---------------|-------------|-----------|-------|---------|---------|---------|
| 5 6       | 3         | 4 5 6         | 4 5 7       | 9         | 8     | 4 5 7   | 2       | 1       |
| 8         | 2 4 5 9   | 2 4 5 9       | 1           | 2 3       | 4 5 7 | 6       | 3 4 5 7 |         |
| 2 5 9     | 1         | 7             | 4 5         | 2 3       | 6     | 4 5 9   | 3 8 9   | 4 5 8   |
| 7         | 5 8 9     | 5 6 9         | 2           | 5 6 8     | 1     | 5 9     | 4       | 5 6     |
| 1 2 5 6 9 | 2 4 5 9   | 1 2 3 4 5 6 9 | 4 5 6 9     | 4 5 6 9   | 4 5   | 8       | 7       | 2 3 5 6 |
| 2 5 6 9   | 2 4 5 8 9 | 2 4 5 6 9     | 4 5 6 7 8 9 | 4 5 6 7 8 | 3     | 1 2 5 9 | 1 6 9   | 2 5 6   |
| 1 9       | 6         | 1 9           | 4 7 8       | 4 7 8     | 2     | 3       | 5       | 4 7 8   |
| 4         | 2 5 7     | 2 5           | 3           | 1 5 6 7 8 | 9     | 1 2 7   | 1 8 7 8 | 2 6     |
| 3         | 2 5 7     | 8             | 4 5 6 7     | 4 5 6 7   | 4 5 7 | 1 2 4   | 1 6     | 9       |

|     |         |           |             |             |           |           |               |         |
|-----|---------|-----------|-------------|-------------|-----------|-----------|---------------|---------|
| 1   | 2       | 4 3 6     | 4 5 6 3     | 4 5 6       | 9         | 7 6       | 8             | 7 5 3   |
| 8   | 4 7     | 3 6 4     | 3 4 6       | 4 5 6       | 1 4 5 6 7 | 5 3       | 2             | 9 1 5 3 |
| 9   | 7       | 3 6       | 5           | 2 3 8       | 1 2 6     | 1 2 3 7 8 | 4             | 1 6 1 3 |
| 2 5 | 1 5 6 8 | 1 2 6 8 9 | 2 4 5 6 8   | 7           | 2 5 8     | 3         | 1 2 4 5 6 8 9 | 1 4     |
| 3   | 5 6 8   | 7         | 1           | 2 4 5 6 8 9 | 2 5 8     | 6         | 2 4 5 6 8 9   | 4       |
| 4   | 1 5 6 8 | 1 2 6 8 9 | 2 3 5 6 8 9 | 2 5 6 8 9   | 2 3 5 8   | 1 7 8     | 1 2 5 6 7     | 1 7 8 9 |
| 2 5 | 1 4 5 8 | 3 4 8     | 1 2 3 7 8   | 2 1 2       | 6         | 9         | 1 4 7         | 1 4 7 8 |
| 6   | 9       | 1 8       | 5 7 8       | 1 5 8       | 4         | 1 7 8     | 3             | 2       |
| 7   | 1 4 8   | 1 2 4 8   | 9           | 3 8         | 1 2 8     | 5         | 1 4           | 6       |

|     |       |         |         |         |             |           |         |         |
|-----|-------|---------|---------|---------|-------------|-----------|---------|---------|
| 3 8 | 6 8   | 1       | 4       | 3 7 8 9 | 2 3 5 6 7 8 | 2 5 6 8 9 | 7 8 9   | 5 6 8 9 |
| 5   | 7     | 3 8 9   | 2 6 8 9 | 3 8     | 2 3 6 8 9   | 1 2 6 8 9 | 1       | 4       |
| 2   | 9     | 4       | 1       | 7 8     | 5 6         | 3         | 7 8     | 5 6     |
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| 8 6 | 2     | 7       | 9       | 5       | 1 3 4 8     | 1 3 4 8   | 1 3 6   |         |
| 4   | 5 6 8 | 5 6 8 9 | 3 7     | 2       | 1 3 7       | 1 5 6 8 9 | 1 3 8 9 | 5 6 8 9 |
| 1   | 3     | 5 9     | 6 8 4   | 4 8 6   | 7           | 2         | 5 9     |         |

|           |             |           |         |           |             |       |           |         |
|-----------|-------------|-----------|---------|-----------|-------------|-------|-----------|---------|
| 1         | 2 3 5 9     | 2 3       | 4       | 7         | 2 5 8 9     | 2 5 8 | 6         | 2 5 8   |
| 8         | 2 7 9       | 2 6 7     | 2 3 5 6 | 3 5       | 2 5 6       | 4     | 9         | 1       |
| 2 6 9     | 2 4 5 6 9   | 2 4 6     | 2 5 6 9 | 5 8 9     | 1           | 2 5 8 | 7         | 3       |
| 2 7       | 2 6 4 7 8   | 2 4 6 7 8 | 5 6 7   | 1         | 4 5 6 7     | 2 5 8 | 3         | 9       |
| 3 7       | 3 6 7       | 3 6       | 9       | 8         | 2 4 5 6 7   | 1     | 4 5 7     | 4 5     |
| 5         | 4 7 8       | 1         | 7 9     | 4 9       | 3           | 6     | 2 4 8 7 8 | 2 4     |
| 4         | 1           | 2 3 8     | 2 3 5 9 | 3 5 8 9   | 2 5 8 9     | 7     | 5 8       | 6       |
| 2 3 6 7 9 | 2 3 6 7 8 9 | 5 6       | 1       | 4 8 7 8   | 3 4 7 8     | 2 9   | 4 8       | 2 4 8   |
| 2 3 7 9   | 2 3 7 8 9   | 2 3 7     | 2 3 5   | 6 4 5 7 8 | 2 3 4 5 7 8 | 3 9   | 1 4 5 8   | 2 4 5 8 |

|         |           |         |           |           |         |             |               |             |
|---------|-----------|---------|-----------|-----------|---------|-------------|---------------|-------------|
| 1 2 5 6 | 2 4 5 6   | 1 2 4 6 | 1 2 8 9   | 1 5 6 8 9 | 2 5 8   | 3           | 2 4 5 6 7 8 9 | 2 4 5 7 8 9 |
| 2 5 6   | 2 3 4 5 6 | 9       | 2 8       | 3 5 6     | 7       | 5 6 8       | 1             | 4 5 8       |
| 7       | 8         | 1 2 3 6 | 4         | 1 5 6 9   | 2 3 5   | 5 6 9       | 2 5 6         | 2 5 9       |
| 3       | 1         | 8       | 5         | 6 4 7 9   | 2       | 4 6 7 9     | 8             | 4 5 9       |
| 5 6 9   | 4 5 6 7 9 | 4 6     | 3         | 2 4 9     | 1       | 8           | 4 5 7 9       |             |
| 2 5 9   | 2 4 5 7 9 | 2 4 7   | 6 8       | 1         | 5 6 7 9 | 3 4 5 6 7 9 | 4 5 7 9       |             |
| 1 2 8 9 | 2 3 7 9   | 1 2 3 7 | 2 7 8 9   | 3 7 9     | 6       | 4           | 2 3 5 7 8     | 2 3 5       |
| 2 8     | 2 3 6 7   | 2 3 6   | 2 7 8     | 4 5 8     | 9       | 1           | 9             | 1           |
| 4       | 2 3 7 9   | 5       | 1 2 7 8 9 | 1 3 8     | 2 3 7 8 |             | 2 3           | 6           |

|             |             |         |           |         |           |         |         |         |
|-------------|-------------|---------|-----------|---------|-----------|---------|---------|---------|
| 1 2 3 4 6 9 | 1 2 3 4 6 9 | 1 2 4 6 | 1 3 7 8   | 3 5 7 8 | 1 5 6 7 8 | 3 5 6 8 | 1 3 6 8 | 1 2 5 8 |
| 1 3 6       | 5           | 7       | 2         | 4       | 1 8       | 3 1 6 8 | 9       |         |
| 8           | 1 2 3 6     | 1 2 6   | 1 3 6     | 3 5     | 9         | 4       | 7       | 1 2 5   |
| 1 2 4 7     | 1 2 4 8     | 9       | 4 8 6     | 2 5     | 3         | 5 6 7 8 | 4 6 7 8 | 4 5 7 8 |
| 5           | 4 8         | 4 6 8   | 9         | 7 8     | 4 6 7 8   | 1       | 2       | 3       |
| 4 7         | 2 6 4 8     | 3       | 4 6 8     | 1 5     | 9         | 4 6 8   | 4 5 7 8 |         |
| 1 3 4 9     | 6           | 1 4 8   | 1 3 4 7 8 | 3 4 7 8 | 2 5       | 2       | 5       | 1 4 7 8 |
| 1 2 3 4 9   | 1 2 3 4 8 9 | 1 2 4 8 | 5         | 6       | 1 2 4 7 8 | 3 4 7 8 | 1 3 8 9 | 1 4 7 8 |
| 1 2 3 4 9   | 7           | 5       | 1 4 8     | 3 8 9   | 1 2 4 8   | 3 4 8 9 | 6       |         |

|           |           |             |         |           |           |           |         |           |
|-----------|-----------|-------------|---------|-----------|-----------|-----------|---------|-----------|
| 9         | 4 5 8     | 3 4 5 8     | 7       | 1 2 8     | 1 2 5 8   | 1 5 8     | 3 6     | 1 4 3     |
| 5 6 7 8   | 1         | 2           | 8 6     | 4         | 9         | 5 7 8     | 3 7 8   | 3 7       |
| 4 5 6 7 8 | 4 5 6 8   | 4 5 8       | 3       | 1 8       | 1 5 6 8   | 2         | 9       | 1 4 7     |
| 4 2 3 4   | 3 4 9     | 6           | 1 2 4   | 1 2 7 9   | 1 2 3 7   | 1 7 9     | 5       | 8         |
| 2 3 4 5 8 | 7         | 1 3 4 5 8 9 | 1 2 4 8 | 1 2 6 8 9 | 1 2 3 8   | 1 6 9     | 1 2 6 9 |           |
| 2 8       |           | 1 8 9       | 1 2 8 6 | 5         | 1 2 6 7 8 | 4         | 3       | 1 2 6 7 9 |
| 4 6 8     | 2         | 7           | 5       | 3         | 1 8       | 1 6 4 8 9 | 1 8     | 6 9       |
| 5 3 8     | 5 8 9     | 5 8 9       | 1 2 8   | 6         | 4         | 1 3 7 8   | 1 2 7   | 1 2 3 7   |
| 1         | 4 3 6 4 8 | 9           | 2 7 8   | 2 7 8     |           | 3 6 4 8   | 2 8     | 5         |

|           |           |             |         |         |             |             |         |         |
|-----------|-----------|-------------|---------|---------|-------------|-------------|---------|---------|
| 6         | 4 5 7     | 4 2 3       | 8       | 9       | 2 3 4 5 6 7 | 2 3 4 5 6 7 | 1       | 4 3 7   |
| 3 4 7 8 9 | 1 4 7 9   | 1 2 3 4 8 9 | 1 2 3 7 | 5       | 1 2 3 6 7 9 | 2 3 4 6 7 9 | 2 4 6 7 | 3 6     |
| 3 5 7 9   | 1 5 7 9   | 1 2 3 9     | 4       | 1 2 3 6 | 8           | 2 5 6 7 9   |         | 3 6     |
| 5 8 9     | 2         | 7           | 4       | 1 3 6 8 | 1 5 8 9     | 1 3 6 8 9   | 6 8 9   | 1 3 6   |
| 8 9       | 3         | 1 6 8 9     | 1 2 9   | 1 2 6 8 | 1 2 8 9     | 4 7         | 4 7     | 5       |
| 4         | 1 5 6 9   | 1 6 8 9     | 1 3 5 9 | 1 3 6 8 | 7           | 1 2 3 6 9   | 2 6 8 9 | 1 3 6   |
| 2         | 4 7 9     | 4 9         | 6       | 1 3 7 9 | 1 5 9       | 4 5 7 8     | 4 5 7 8 | 1 4 7 8 |
| 3 7 9     | 8         | 5           | 1 3 7 9 | 1 3 7   | 4           | 1 6 7       | 6       | 2       |
| 1         | 4 6 4 6 7 | 2 5 7 8     | 2 5 7 8 | 2 5 8   | 4 5 7       | 3           | 9       |         |

|           |             |           |         |         |         |             |             |   |
|-----------|-------------|-----------|---------|---------|---------|-------------|-------------|---|
| 8         | 4 5 6 7     | 7         | 2       | 4 6 5 9 | 1 4 5 9 | 1 1 3 4 5 9 |             |   |
| 9         | 4 5 6 4 5 6 | 3         | 4 6 7   | 1 5 7   | 8       | 2           | 1 4 5 7     |   |
| 1         | 4 5 3       | 2         | 4 7 9   | 8       | 5 7 9   | 4 5 7 9     | 3 7 9       | 6 |
| 5 6 7     | 8           | 5 6 9     | 2 6 7 9 | 4       | 3       | 1 6 7 9     | 1 2 7 9     |   |
| 4 3 7     | 4 6 7 9     | 1         | 6 7 8 9 | 2 3 7   | 2 3 7   | 6 7 9       | 5 7 9       | 2 |
| 3 6 7     | 2           | 3 6 9     | 5       | 1 7 9   | 3 7 9   | 6 7 9       | 4           | 8 |
| 4 5 7     | 4 5 7       | 4 5 8     | 1 4 7 8 | 9       | 6       | 2           | 1 4 5 7     |   |
| 2 4 5 6 7 | 4 5 6 7 9   | 4 5 6 8 9 | 1 4 7 8 | 4 7     | 2 3 7 8 | 2 3 7 8     | 1 4 5 6 7 9 |   |
| 4 2 6 7   | 1           | 4 6 9     | 5       | 2 7     | 4 6 8 9 | 8           | 3           |   |

|       |         |     |     |     |       |         |           |       |
|-------|---------|-----|-----|-----|-------|---------|-----------|-------|
| 4 7   | 4 7     | 1   | 5   | 6   | 9     | 2 3 8   | 2 3 8     | 3 8   |
| 2     | 3       | 5   | 1   | 8   | 4     | 6 9     | 6 9       | 7     |
| 8     | 6       | 9   | 3   | 2   | 7     | 5       | 1         | 4     |
| 6 7 9 | 1 5 7   | 8   | 2   | 5 9 | 3 5 6 | 3 7     | 4         | 1 5 3 |
| 3     | 2 5 7   | 4   | 8   | 7   | 1     | 2 6 9   | 6 9       | 5 6   |
| 6 7 9 | 1 2 5 7 | 2 6 | 4   | 5 9 | 3 5 6 | 2 3 7 8 | 2 3 1 5 8 | 3 8   |
| 5     | 9       | 2 3 | 6   | 1   | 8     | 4       | 7         | 2 3   |
| 4 6 4 | 2 7     | 9   | 5 3 | 5 3 | 1     | 8       | 2 6       |       |
| 1     | 8       | 3 6 | 7   | 4   | 2     | 3 6     | 5         | 9     |

|           |         |         |             |             |             |         |         |       |
|-----------|---------|---------|-------------|-------------|-------------|---------|---------|-------|
| 4 8       | 3 7     | 3 1 3 6 | 5           | 2           | 1 4 6 7 8 9 | 1 6 8 9 | 6 8 9   | 3 6 9 |
| 2 5 8     | 9       | 1 5 6 7 | 1 6 7       | 6 3         | 1 2 5 6 8   | 2 5 6 8 | 4       |       |
| 2 3 4 5 8 | 2 3 5 6 | 1 3 5 6 | 4 6 8 9     | 6 4 6 8 9   | 7           | 5 6 8 9 | 5 6 9   |       |
| 2 3 5 9   | 1       | 5 3 7 9 | 2 3 6 7 8 9 | 3 2 6 7 8 9 | 2 5 6 9     | 4       | 5 6 9   |       |
| 2 9       | 8       | 7 9     | 2 6 7 9     | 4           | 5           | 3       | 2 6 7 9 | 1     |
| 6         | 2 3 5 7 | 4       | 2 3 7 9     | 1 7 9       | 2 5 7 9     | 2 5 9   | 8       |       |
| 7         | 5 6     | 2       | 1 4 6 9     | 3 5 6 4 6 9 | 4 5 6 8 9   | 5 6 8 9 | 5 6 9   |       |
| 1         | 5 6     | 8       | 4 7 9       | 5 6 4 7 9   | 4 5 6 9     | 3       | 2       |       |
| 5 3 9     | 4       | 5 6 9   | 2 3 6       | 8           | 2 6 5 6     | 1       | 7       |       |

|         |         |         |         |         |       |       |               |       |
|---------|---------|---------|---------|---------|-------|-------|---------------|-------|
| 6       | 3 7 9   | 7 9     | 1 3 7   | 1 3 7   | 5     | 8     | 4             | 2     |
| 5       | 8       | 1       | 2 3 7   | 3 4 7   | 2 3 7 | 9     | 6             |       |
| 4 7     | 3 4 7   | 2 3 4 7 | 8       | 6       | 9     | 5 7   | 1 5 7         | 1 3 7 |
| 1 3 7   | 2 3 7   | 2 7     | 4       | 1 8     | 2 6 8 | 9     | 1 2 3 6 7     | 5     |
| 1 4 7 9 | 2 4 7 9 | 5       | 1 2 6 9 | 1 9     | 3     | 4 7   | 1 2 6 7       | 8     |
| 1 3 4 9 | 6       | 8       | 1 2 5 9 | 1 5 9   | 7     | 4     | 2 3 1 2 3 1 3 |       |
| 7 9     | 5       | 3       | 7 9     | 2       | 1     | 6     | 8             | 4     |
| 8       | 1       | 4 6 9   | 3 5 6 9 | 4 5 9   | 4 6   | 2 3 5 | 2 3 5         | 7     |
| 2       | 4 7     | 4 6 7   | 5 6 7   | 4 5 7 8 | 4 6 8 | 1     | 5 3           | 9     |

|                               |                               |                              |                             |                              |                                |                                |                                |                             |
|-------------------------------|-------------------------------|------------------------------|-----------------------------|------------------------------|--------------------------------|--------------------------------|--------------------------------|-----------------------------|
| 9                             | 6                             | 7                            | 4                           | 8                            | <sup>1</sup> 5                 | 3                              | <sup>1</sup> 5                 | 2                           |
| <sup>2</sup> <sub>5</sub> 8   | 3                             | <sup>2</sup> <sub>5</sub> 8  | 6                           | <sup>1</sup> <sub>5</sub> 9  | <sup>1</sup> <sub>5</sub> 9    | 7                              | <sup>1</sup> <sub>4</sub> 58   | <sup>1</sup> <sub>4</sub> 8 |
| 1                             | 4                             | <sup>5</sup> <sub>8</sub>    | 2                           | 7                            | 3                              | <sup>5</sup> <sub>8</sub> 9    | <sup>5</sup> <sub>8</sub> 9    | 6                           |
| <sup>4</sup> <sub>5</sub> 78  | <sup>3</sup> <sub>1</sub> 578 | <sup>4</sup> <sub>5</sub> 8  | 9                           | <sup>1</sup> <sub>5</sub> 6  | <sup>1</sup> <sub>5</sub> 68   | <sup>1</sup> <sub>2</sub> 3456 | <sup>1</sup> <sub>2</sub> 3456 | <sup>1</sup> <sub>4</sub> 8 |
| <sup>5</sup> <sub>7</sub> 8   | 2                             | 6                            | <sup>1</sup> <sub>7</sub> 8 | 3                            | 4                              | <sup>1</sup> <sub>5</sub> 8    | <sup>1</sup> <sub>5</sub> 78   | 9                           |
| <sup>4</sup> <sub>5</sub> 78  | <sup>3</sup> <sub>1</sub> 578 | 9                            | <sup>1</sup> <sub>7</sub> 8 | 2                            | <sup>1</sup> <sub>5</sub> 68   | <sup>1</sup> <sub>4</sub> 5678 | <sup>1</sup> <sub>3</sub> 456  | <sup>1</sup> <sub>4</sub> 8 |
| <sup>2</sup> <sub>8</sub>     | 9                             | 3                            | <sup>1</sup> <sub>8</sub>   | 4                            | 7                              | <sup>1</sup> <sub>2</sub> 68   | <sup>1</sup> <sub>2</sub> 68   | 5                           |
| 6                             | <sup>5</sup> <sub>8</sub>     | 1                            | 3                           | <sup>5</sup> <sub>9</sub>    | <sup>5</sup> <sub>8</sub> 9    | <sup>4</sup> <sub>8</sub> 9    | <sup>4</sup> <sub>8</sub> 9    | 7                           |
| <sup>2</sup> <sub>4</sub> 578 | <sup>5</sup> <sub>7</sub> 8   | <sup>2</sup> <sub>4</sub> 58 | <sup>1</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>5</sub> 69 | <sup>1</sup> <sub>2</sub> 5689 | <sup>1</sup> <sub>2</sub> 89   | <sup>1</sup> <sub>2</sub> 89   | 3                           |

|                              |                             |                              |                              |                               |                               |                               |                               |                               |
|------------------------------|-----------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 6                            | 7                           | <sup>1</sup> <sub>4</sub> 9  | <sup>2</sup> <sub>3</sub> 59 | <sup>1</sup> <sub>2</sub> 39  | 8                             | <sup>1</sup> <sub>2</sub> 349 | <sup>1</sup> <sub>2</sub> 349 | <sup>3</sup> <sub>4</sub> 59  |
| <sup>5</sup> <sub>9</sub>    | <sup>5</sup> <sub>9</sub>   | <sup>1</sup> <sub>8</sub> 9  | 4                            | <sup>1</sup> <sub>2</sub> 369 | <sup>2</sup> <sub>3</sub> 569 | 7                             | <sup>1</sup> <sub>2</sub> 38  | <sup>5</sup> <sub>8</sub> 9   |
| <sup>3</sup> <sub>4</sub> 59 | 2                           | <sup>1</sup> <sub>4</sub> 89 | <sup>3</sup> <sub>5</sub> 9  | <sup>1</sup> <sub>3</sub> 9   | 7                             | 6                             | <sup>1</sup> <sub>3</sub> 8   | <sup>3</sup> <sub>4</sub> 589 |
| <sup>1</sup> <sub>8</sub>    | <sup>1</sup> <sub>8</sub>   | 2                            | <sup>5</sup> <sub>6</sub> 9  | <sup>3</sup> <sub>6</sub> 9   | <sup>3</sup> <sub>5</sub> 69  | <sup>5</sup> <sub>3</sub>     | 4                             | 7                             |
| 7                            | 6                           | 3                            | <sup>2</sup> <sub>5</sub>    | 8                             | 4                             | <sup>2</sup> <sub>5</sub>     | 9                             | 1                             |
| <sup>4</sup> <sub>5</sub> 9  | <sup>4</sup> <sub>5</sub> 9 | <sup>4</sup> <sub>9</sub>    | 1                            | 7                             | <sup>2</sup> <sub>3</sub>     | 8                             | <sup>2</sup> <sub>3</sub> 6   | <sup>3</sup> <sub>6</sub>     |
| <sup>2</sup> <sub>4</sub> 89 | <sup>4</sup> <sub>8</sub> 9 | <sup>7</sup> <sub>8</sub> 9  | <sup>2</sup> <sub>3</sub> 6  | <sup>2</sup> <sub>3</sub> 6   | <sup>2</sup> <sub>3</sub> 6   | 1                             | <sup>4</sup> <sub>9</sub>     | <sup>3</sup> <sub>4</sub> 689 |
| <sup>1</sup> <sub>2</sub> 34 | <sup>3</sup> <sub>6</sub>   | <sup>2</sup> <sub>7</sub> 89 | <sup>2</sup> <sub>6</sub>    | <sup>5</sup> <sub>9</sub>     | <sup>2</sup> <sub>6</sub>     | <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>6</sub> 46  | <sup>6</sup> <sub>4</sub> 89  |
| <sup>1</sup> <sub>4</sub> 89 | <sup>3</sup> <sub>7</sub>   | <sup>5</sup> <sub>7</sub> 89 | <sup>3</sup> <sub>6</sub>    | <sup>3</sup> <sub>6</sub>     | <sup>3</sup> <sub>6</sub>     | <sup>3</sup> <sub>1</sub> 31  | <sup>3</sup> <sub>6</sub>     | 2                             |

|                              |                              |                             |                              |                             |                             |                               |                              |                               |
|------------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|-----------------------------|-------------------------------|------------------------------|-------------------------------|
| 5                            | 3                            | <sup>4</sup> <sub>8</sub> 6 | <sup>4</sup> <sub>8</sub> 6  | 1                           | 9                           | 7                             | 2                            | <sup>4</sup> <sub>8</sub> 6   |
| <sup>1</sup> <sub>4</sub> 68 | 7                            | 9                           | <sup>3</sup> <sub>4</sub> 68 | 2                           | <sup>4</sup> <sub>5</sub> 8 | <sup>3</sup> <sub>1</sub> 345 | <sup>3</sup> <sub>4</sub> 56 | <sup>3</sup> <sub>4</sub> 568 |
| <sup>1</sup> <sub>4</sub> 68 | <sup>1</sup> <sub>4</sub> 6  | 2                           | 5                            | <sup>4</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>6</sub>   | 9                             | <sup>1</sup> <sub>4</sub>    | <sup>3</sup> <sub>4</sub> 68  |
| <sup>1</sup> <sub>4</sub> 39 | <sup>3</sup> <sub>1</sub> 49 | <sup>4</sup> <sub>5</sub> 3 | 2                            | <sup>4</sup> <sub>5</sub> 7 | <sup>1</sup> <sub>3</sub>   | 6                             | 8                            | <sup>4</sup> <sub>5</sub> 3   |
| 7                            | 2                            | <sup>4</sup> <sub>5</sub> 6 | <sup>3</sup> <sub>4</sub> 6  | <sup>4</sup> <sub>5</sub> 8 | <sup>3</sup> <sub>6</sub>   | <sup>4</sup> <sub>5</sub> 3   | 9                            | 1                             |
| <sup>1</sup> <sub>4</sub> 36 | 8                            | <sup>4</sup> <sub>5</sub> 6 | <sup>3</sup> <sub>4</sub> 6  | 9                           | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>     | 2                            | <sup>4</sup> <sub>5</sub> 3   |
| <sup>3</sup> <sub>8</sub>    | <sup>4</sup> <sub>5</sub> 6  | 1                           | 7                            | 2                           | <sup>4</sup> <sub>5</sub>   | <sup>4</sup> <sub>5</sub> 8   | <sup>3</sup> <sub>4</sub> 56 | 9                             |
| <sup>4</sup> <sub>6</sub> 9  | <sup>4</sup> <sub>5</sub> 69 | 7                           | 1                            | 3                           | 8                           | <sup>4</sup> <sub>5</sub>     | <sup>4</sup> <sub>5</sub> 6  | 2                             |
| 2                            | <sup>4</sup> <sub>5</sub>    | <sup>3</sup> <sub>8</sub>   | 9                            | 6                           | <sup>4</sup> <sub>5</sub>   | 1                             | 7                            | <sup>3</sup> <sub>8</sub>     |

|                                |                              |                              |                               |                              |                               |                               |                              |                              |
|--------------------------------|------------------------------|------------------------------|-------------------------------|------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|
| <sup>1</sup> <sub>2</sub> 38   | 6                            | <sup>1</sup> <sub>4</sub>    | <sup>1</sup> <sub>2</sub> 8   | <sup>1</sup> <sub>2</sub> 8  | 7                             | 5                             | <sup>1</sup> <sub>4</sub> 3  | 9                            |
| <sup>1</sup> <sub>2</sub> 5789 | <sup>2</sup> <sub>5</sub>    | <sup>1</sup> <sub>5</sub>    | <sup>1</sup> <sub>2</sub> 689 | 4                            | 3                             | <sup>2</sup> <sub>7</sub> 86  | <sup>1</sup> <sub>2</sub> 78 | <sup>6</sup> <sub>7</sub> 8  |
| <sup>1</sup> <sub>2</sub> 3789 | <sup>4</sup> <sub>2</sub> 3  | <sup>1</sup> <sub>4</sub>    | <sup>1</sup> <sub>2</sub> 689 | 5                            | <sup>1</sup> <sub>6</sub>     | <sup>2</sup> <sub>3</sub> 13  | <sup>1</sup> <sub>2</sub> 36 | <sup>1</sup> <sub>2</sub> 36 |
| 6                              | <sup>5</sup> <sub>7</sub>    | 3                            | <sup>1</sup> <sub>2</sub> 59  | <sup>1</sup> <sub>2</sub> 9  | <sup>1</sup> <sub>5</sub> 9   | 4                             | 8                            | <sup>1</sup> <sub>2</sub> 7  |
| <sup>7</sup> <sub>8</sub> 9    | <sup>4</sup> <sub>7</sub> 8  | <sup>4</sup> <sub>7</sub> 9  | <sup>1</sup> <sub>2</sub> 378 | 6                            | <sup>1</sup> <sub>8</sub>     | <sup>2</sup> <sub>3</sub> 13  | <sup>3</sup> <sub>7</sub> 9  | 5                            |
| <sup>5</sup> <sub>7</sub> 89   | 1                            | 2                            | <sup>4</sup> <sub>5</sub> 78  | <sup>3</sup> <sub>8</sub>    | <sup>4</sup> <sub>5</sub> 8   | <sup>7</sup> <sub>9</sub>     | 6                            | <sup>3</sup> <sub>7</sub>    |
| <sup>1</sup> <sub>5</sub> 3    | 9                            | <sup>1</sup> <sub>5</sub> 6  | <sup>1</sup> <sub>5</sub> 68  | 7                            | 2                             | <sup>3</sup> <sub>6</sub> 5   | <sup>3</sup> <sub>4</sub>    | <sup>3</sup> <sub>6</sub>    |
| 4                              | <sup>5</sup> <sub>7</sub>    | <sup>3</sup> <sub>1</sub> 56 | <sup>1</sup> <sub>5</sub> 689 | <sup>1</sup> <sub>3</sub> 89 | <sup>1</sup> <sub>3</sub> 89  | <sup>5</sup> <sub>6</sub> 789 | 2                            | <sup>3</sup> <sub>7</sub> 8  |
| <sup>2</sup> <sub>3</sub> 57   | <sup>2</sup> <sub>3</sub> 57 | 8                            | <sup>3</sup> <sub>4</sub> 569 | <sup>3</sup> <sub>9</sub>    | <sup>3</sup> <sub>4</sub> 569 | 1                             | <sup>5</sup> <sub>7</sub> 9  | <sup>3</sup> <sub>6</sub>    |

|                              |                               |                             |                              |                               |                              |                             |                             |                               |
|------------------------------|-------------------------------|-----------------------------|------------------------------|-------------------------------|------------------------------|-----------------------------|-----------------------------|-------------------------------|
| <sup>1</sup> <sub>2</sub> 8  | 4                             | <sup>2</sup> <sub>6</sub>   | <sup>2</sup> <sub>5</sub> 9  | <sup>1</sup> <sub>2</sub> 569 | <sup>1</sup> <sub>5</sub> 69 | 3                           | 7                           | <sup>1</sup> <sub>2</sub> 56  |
| <sup>1</sup> <sub>2</sub> 8  | <sup>1</sup> <sub>2</sub> 568 | 3                           | <sup>2</sup> <sub>5</sub>    | 7                             | <sup>1</sup> <sub>5</sub> 6  | 4                           | 9                           | <sup>1</sup> <sub>2</sub> 568 |
| 9                            | <sup>1</sup> <sub>2</sub> 56  | 7                           | 4                            | 8                             | 3                            | <sup>1</sup> <sub>2</sub> 6 | <sup>5</sup> <sub>6</sub>   | <sup>1</sup> <sub>2</sub> 56  |
| <sup>2</sup> <sub>3</sub>    | <sup>2</sup> <sub>3</sub>     | 1                           | 6                            | <sup>4</sup> <sub>9</sub>     | 7                            | <sup>4</sup> <sub>8</sub> 9 | <sup>4</sup> <sub>5</sub>   | <sup>4</sup> <sub>5</sub>     |
| <sup>4</sup> <sub>7</sub>    | <sup>6</sup> <sub>4</sub> 6   | <sup>5</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>5</sub> 9  | <sup>1</sup> <sub>5</sub> 89  | <sup>1</sup> <sub>9</sub>    | 2                           | 3                           | <sup>6</sup> <sub>4</sub> 6   |
| 5                            | 9                             | 8                           | 3                            | <sup>1</sup> <sub>4</sub>     | 2                            | <sup>1</sup> <sub>6</sub> 4 | <sup>1</sup> <sub>6</sub> 4 | <sup>1</sup> <sub>6</sub>     |
| <sup>1</sup> <sub>2</sub> 34 | <sup>1</sup> <sub>2</sub> 34  | <sup>2</sup> <sub>4</sub>   | <sup>2</sup> <sub>5</sub> 78 | <sup>2</sup> <sub>5</sub> 68  | <sup>4</sup> <sub>5</sub> 68 | <sup>2</sup> <sub>6</sub> 4 | <sup>3</sup> <sub>6</sub>   | 9                             |
| 6                            | <sup>2</sup> <sub>3</sub> 78  | 5                           | 1                            | <sup>2</sup> <sub>9</sub>     | <sup>4</sup> <sub>8</sub> 9  | <sup>7</sup> <sub>8</sub>   | <sup>4</sup> <sub>8</sub>   | <sup>2</sup> <sub>7</sub>     |
| <sup>4</sup> <sub>7</sub> 8  | <sup>2</sup> <sub>7</sub> 8   | 9                           | <sup>2</sup> <sub>7</sub> 8  | 3                             | <sup>4</sup> <sub>6</sub> 8  | 5                           | 1                           | <sup>2</sup> <sub>4</sub> 6   |

|                              |                               |                                |                                |                               |                              |                               |                              |                              |
|------------------------------|-------------------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|
| <sup>1</sup> <sub>6</sub> 9  | 2                             | <sup>6</sup> <sub>8</sub> 9    | <sup>1</sup> <sub>5</sub> 8    | <sup>5</sup> <sub>8</sub> 9   | 3                            | 4                             | <sup>1</sup> <sub>5</sub> 89 | 7                            |
| 5                            | <sup>1</sup> <sub>9</sub>     | <sup>3</sup> <sub>8</sub> 9    | <sup>1</sup> <sub>2</sub> 8    | <sup>2</sup> <sub>3</sub> 6   | <sup>1</sup> <sub>2</sub> 8  | <sup>2</sup> <sub>3</sub> 12  | <sup>1</sup> <sub>6</sub> 9  | <sup>6</sup> <sub>9</sub>    |
| <sup>1</sup> <sub>3</sub> 47 | <sup>1</sup> <sub>4</sub> 7   | <sup>4</sup> <sub>7</sub> 89   | 6                              | <sup>2</sup> <sub>5</sub> 89  | <sup>1</sup> <sub>5</sub> 8  | <sup>2</sup> <sub>3</sub> 12  | <sup>1</sup> <sub>5</sub> 9  | <sup>1</sup> <sub>5</sub> 9  |
| <sup>2</sup> <sub>3</sub> 67 | <sup>4</sup> <sub>5</sub> 67  | <sup>2</sup> <sub>3</sub> 4567 | <sup>2</sup> <sub>3</sub> 4567 | 1                             | <sup>5</sup> <sub>6</sub> 7  | 8                             | <sup>4</sup> <sub>5</sub> 9  | <sup>4</sup> <sub>5</sub> 69 |
| <sup>3</sup> <sub>6</sub> 79 | 8                             | 1                              | <sup>4</sup> <sub>5</sub> 7    | <sup>3</sup> <sub>4</sub> 567 | <sup>5</sup> <sub>6</sub> 7  | <sup>5</sup> <sub>6</sub> 459 | <sup>2</sup> <sub>9</sub>    | <sup>2</sup> <sub>9</sub>    |
| <sup>2</sup> <sub>6</sub>    | <sup>2</sup> <sub>6</sub> 456 | <sup>2</sup> <sub>4</sub> 56   | <sup>2</sup> <sub>4</sub> 568  | <sup>2</sup> <sub>4</sub> 568 | 9                            | 1                             | 7                            | 3                            |
| 8                            | 3                             | <sup>2</sup> <sub>5</sub> 67   | <sup>1</sup> <sub>4</sub> 57   | <sup>4</sup> <sub>5</sub> 67  | <sup>1</sup> <sub>5</sub> 67 | 9                             | <sup>1</sup> <sub>2</sub> 45 | <sup>1</sup> <sub>4</sub> 5  |
| <sup>1</sup> <sub>2</sub> 79 | <sup>1</sup> <sub>5</sub> 79  | <sup>2</sup> <sub>5</sub> 9    | <sup>1</sup> <sub>4</sub> 578  | <sup>3</sup> <sub>4</sub> 58  | <sup>1</sup> <sub>5</sub> 78 | <sup>2</sup> <sub>5</sub> 7   | 6                            | <sup>1</sup> <sub>4</sub> 58 |
| 4                            | <sup>1</sup> <sub>5</sub> 67  | <sup>5</sup> <sub>6</sub> 7    | 9                              | <sup>5</sup> <sub>6</sub> 8   | 2                            | <sup>5</sup> <sub>7</sub>     | 3                            | <sup>1</sup> <sub>5</sub> 8  |

|             |                 |                      |                           |                                  |              |                       |                              |
|-------------|-----------------|----------------------|---------------------------|----------------------------------|--------------|-----------------------|------------------------------|
| 1<br>4<br>7 | 1<br>4 5 6<br>7 | 2                    | 4<br>3<br>6 4<br>3<br>6 9 | 8                                | 7<br>5<br>9  | 3<br>5<br>6<br>3<br>9 | 3<br>5<br>6                  |
| 8           | 5 6             | 3                    | 7                         | 2<br>6<br>9                      | 1            | 4                     | 2<br>5<br>6<br>9             |
| 9           | 4<br>7          | 6<br>7               | 6                         | 2 3<br>4 6<br>2 3<br>4 6         | 5            | 2 3<br>7              | 8<br>1                       |
| 5           | 1<br>7 8        | 3<br>7 8             | 1                         | 4<br>8<br>3<br>6 4<br>3<br>6 7 8 | 2            | 1<br>7<br>3<br>4<br>6 | 9                            |
| 6           | 1 2 3<br>7      | 4                    | 5<br>3<br>7               | 5<br>3<br>9                      | 8            | 1 2 3<br>7            | 2 3<br>5                     |
|             | 3<br>7          | 2 3<br>7 8           | 9                         | 1                                | 4 5 6<br>7 8 | 3<br>6                | 2 3<br>4 5 6<br>2 3<br>4 5 6 |
| 2           | 1<br>7 8        | 3<br>6<br>5 6<br>7 8 | 1<br>5 6<br>5 6<br>8      | 4                                | 1<br>5<br>9  | 3<br>5<br>9           | 3<br>5<br>8                  |
|             | 4<br>7          | 3<br>7 8             | 5<br>7 8                  | 9                                | 1            | 7                     | 2 3<br>4 5<br>8              |
| 1<br>4      | 3<br>9          | 1<br>5 6<br>8        | 2 3<br>5 6<br>8           | 2 3<br>5 6<br>8                  | 3<br>6       | 1<br>5<br>4 5         | 3<br>7                       |

|          |             |                 |               |             |                 |          |               |                 |
|----------|-------------|-----------------|---------------|-------------|-----------------|----------|---------------|-----------------|
| 1<br>7 8 | 1<br>4<br>7 | 4<br>7 8        | 2             | 5           | 6<br>9          | 7 8      | 6<br>9        | 3               |
| 6        | 5           | 2<br>7 8        | 1<br>7 8 9    | 3<br>1<br>3 | 7 8 9           | 4        | 1<br>8 9<br>7 | 1 2             |
| 3        | 2<br>7      | 9               | 1<br>4<br>7 8 | 6<br>4      | 6<br>4 6<br>7 8 | 2<br>7 8 | 1<br>5 6<br>8 | 1 2<br>5 6<br>7 |
| 4        | 2<br>7      | 6<br>5          | 6<br>7        | 2<br>9      | 2<br>6<br>7     | 1        | 3             | 8               |
| 1 2<br>7 | 8           | 3               | 1<br>4 5<br>7 | 1 2<br>4    | 2<br>4 5<br>7   | 6        | 2<br>7        | 9               |
| 9        | 1 2<br>7    | 6<br>7          | 2<br>6        | 1<br>6      | 8               | 3        | 5             | 2<br>4          |
| 2<br>7 8 | 2 3<br>7    | 2<br>6<br>7 8   | 3<br>5 6<br>8 | 2 3<br>6    | 1               | 9        | 4             | 2<br>5 6<br>7   |
| 2<br>8   | 9           | 1               | 4 5 6<br>8    | 7           | 4 5 6<br>8      | 3        | 5 6<br>8      | 2<br>5 6        |
| 5        | 4<br>7      | 2 3<br>6<br>7 8 | 2<br>6        | 3<br>8      | 9               | 2<br>8   | 2<br>7 8      | 1 2<br>6<br>7   |

|        |        |          |        |        |                  |             |             |          |             |          |                 |
|--------|--------|----------|--------|--------|------------------|-------------|-------------|----------|-------------|----------|-----------------|
| 1<br>4 | 3<br>6 | 1<br>4   | 3<br>6 | 4<br>5 | 3                | 2<br>5      | 3<br>6      | 9        | 1<br>4<br>7 | 3<br>8   | 1 2 3<br>4<br>6 |
| 1<br>8 | 3<br>6 | 1<br>8 9 | 3<br>6 | 5<br>9 | 3                | 2<br>5      | 4           | 7 8      | 3<br>7      | 1 3<br>6 | 2 3<br>6        |
| 4<br>8 | 3<br>6 | 2        | 7      | 1      | 3<br>8           | 5           | 4<br>6      | 4<br>6   | 9           | 3        | 3<br>6          |
| 5      | 4      | 3<br>2   | 4<br>3 | 9      | 1<br>6           | 8           | 1<br>6      | 7        |             |          |                 |
| 4<br>8 | 3<br>4 | 3<br>8   | 6      | 4<br>7 | 3<br>1<br>3<br>7 | 2           | 9           | 1<br>4   | 3<br>5      |          |                 |
| 9      | 7      | 1        | 8      | 5      | 4<br>3<br>6      | 4           | 3<br>4      | 2 3<br>6 | 2 3<br>4    | 6        |                 |
| 2      | 1<br>4 | 3<br>8   | 9      | 1<br>7 | 3<br>5           | 6           | 4<br>7      | 3<br>4   | 1<br>3      |          |                 |
| 1<br>4 | 3<br>7 | 5        | 4<br>9 | 6      | 2                | 1<br>4<br>7 | 3<br>4<br>7 | 9        | 8           |          |                 |
| 1<br>4 | 3<br>6 | 1<br>4   | 3<br>6 | 4<br>9 | 3                | 1<br>4      | 3<br>7      | 1<br>4   | 3<br>8      |          |                 |

|            |               |             |                 |               |             |   |          |                 |                 |
|------------|---------------|-------------|-----------------|---------------|-------------|---|----------|-----------------|-----------------|
| 2<br>4     | 6<br>9        | 4<br>5      | 2<br>4 5 6<br>9 | 3<br>4 5<br>9 | 2<br>5<br>9 | 8 | 1 2<br>6 | 7               | 1 2 3<br>5<br>9 |
| 2<br>4     | 1             | 3           | 4<br>7 8 9      | 5<br>7        | 2<br>9      | 6 | 2<br>8   | 2<br>5<br>8 9   | 2<br>5<br>8 9   |
| 2<br>7 8 9 | 6<br>7 8      | 5<br>7 8    | 2<br>5 6<br>7 9 | 3<br>5<br>9   | 2<br>5<br>9 | 1 | 2<br>6   | 2 3<br>5<br>8 9 | 4               |
| 2 3<br>7   | 3<br>6        | 2<br>7      | 6<br>7          | 1             | 3<br>8 9    | 4 | 5        | 2<br>8 9        | 2<br>7 8 9      |
| 1 2<br>4   | 6             | 9           | 1 2<br>4 5 6    | 5<br>8        | 5 6<br>8    | 7 | 3        | 1 2<br>4        | 1 2<br>8        |
| 1<br>4     | 3<br>4 5<br>7 | 3<br>8      | 2               | 5<br>9        | 3<br>5<br>9 | 1 | 1<br>4   | 9               | 6               |
| 5          | 4<br>7 8      | 3<br>4<br>7 | 6               | 7 8           | 2           | 9 | 1<br>4   | 3<br>8          | 1<br>7 8        |
| 1<br>7 8 9 | 2<br>7        | 1<br>9      | 5<br>7 8 9      | 4             | 3           | 1 | 7 8      | 6               | 1<br>5<br>7 8   |
| 4<br>7 8 9 | 3<br>6        | 4<br>7      | 9               | 5<br>7 8 9    | 1           | 5 | 2<br>4   | 2 3<br>4 5<br>8 | 2 3<br>5<br>7 8 |

|          |                 |               |            |             |          |               |                 |                      |
|----------|-----------------|---------------|------------|-------------|----------|---------------|-----------------|----------------------|
| 8        | 1 2<br>5<br>9   | 7             | 3<br>9     | 3<br>5<br>9 | 4        | 6             | 1<br>5          | 1 2                  |
| 1 2      | 3               | 4 5           | 1 2<br>8   | 6           | 1 2<br>8 | 9             | 4 5<br>7        | 4<br>7               |
|          | 6<br>9          | 1<br>4 5<br>9 | 4 5 6      | 7           | 5<br>9   |               | 1 2<br>4 5<br>8 | 3                    |
| 1 2<br>4 | 6               | 9             | 1<br>8     | 3<br>7 8    | 3<br>7 8 | 1<br>4        | 1<br>8          | 5                    |
| 5        | 1 2<br>8        | 2<br>8        | 1<br>6     | 4           | 9        | 7             | 3               | 1 2<br>6             |
| 1<br>4   | 7               | 3             | 1<br>8     | 6<br>2      | 5        | 1<br>4        | 1<br>4          | 1<br>6 4<br>8 9      |
| 7        | 2<br>4 5<br>8 9 | 1             | 2 3<br>8 9 | 3<br>8 9    | 6        | 4 5<br>8      | 4 5<br>8 9      | 4<br>8 9             |
|          | 3<br>6<br>9     | 2<br>4 8      | 2<br>6     | 5           | 1        | 2 3<br>4      | 3<br>8          | 4<br>6 4<br>7 8 9    |
|          | 3<br>6          | 4 5<br>8 9    | 4<br>8     | 3<br>7 8    | 3        | 1<br>4 5<br>8 | 3               | 2<br>4<br>6<br>7 8 9 |

|               |               |            |        |             |               |             |               |               |
|---------------|---------------|------------|--------|-------------|---------------|-------------|---------------|---------------|
| 3             | 1 2<br>7 8 9  | 1 2<br>7 8 | 1<br>7 | 5<br>7      | 4             | 2<br>5<br>8 | 2<br>5<br>8 9 | 6             |
| 4             | 1<br>9        | 1<br>8 9   | 3<br>6 | 2           | 3<br>5 6<br>9 | 4<br>5<br>8 | 7             | 3<br>5<br>8 9 |
| 4             | 2<br>7 9      | 6          | 5      | 8           | 3<br>7        | 3<br>4      | 2 3<br>4      | 1             |
| 1             | 3             | 2<br>4 7 8 | 5      | 4<br>7 8    | 6<br>7 8      | 9           | 2<br>6        | 7 8           |
| 6             | 5<br>7 8      | 7 8        | 2      | 9           | 1             | 4 5<br>8    | 4 5<br>8      | 5<br>7 8      |
| 2<br>4 5<br>7 | 2<br>5<br>7 8 | 9          | 3<br>6 | 3<br>4 7 8  | 3<br>6        | 1 2<br>6    | 1 2<br>6      | 5<br>7 8      |
| 2<br>5        | 1 2<br>5      | 3<br>6     | 9      | 1<br>5<br>8 | 3<br>5<br>8   | 7           | 1<br>5 6<br>8 | 4             |
| 8             | 4             | 3<br>6     | 1<br>7 | 3<br>5      | 2             | 1<br>5 6    | 1<br>5 6<br>9 | 5<br>9        |
| 5<br>7 9      | 1<br>5<br>7   | 1<br>9     | 4      | 6           | 5<br>8        | 1<br>5<br>8 | 3             | 2             |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 3 | 3 | 2 | 2 | 2 | 9 | 2 | 7 |
| 8 | 5 |   |   | 4 | 1 | 1 | 3 | 1 | 6 |
| 5 | 4 | 6 | 2 | 3 | 1 | 1 | 1 | 1 |   |
| 2 | 3 | 1 | 3 | 2 | 1 | 2 | 4 | 6 | 8 |
| 2 | 8 | 1 |   | 5 | 1 | 2 | 7 | 3 | 4 |
| 6 |   | 3 | 4 | 9 | 8 |   | 2 | 1 | 1 |
|   | 3 | 3 | 3 | 1 | 4 | 3 | 4 | 5 | 6 |
| 2 | 3 | 1 | 2 | 5 | 6 | 4 | 6 | 4 | 6 |
| 4 | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 3 |   |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 3 | 9 | 2 | 1 | 2 | 4 | 1 | 2 | 3 |
| 5 | 6 | 1 | 5 | 7 | 8 |   | 5 | 6 | 1 |
| 2 | 3 | 1 | 2 | 6 | 2 | 2 | 2 | 4 | 2 |
| 2 | 3 | 2 | 2 | 9 | 2 | 1 | 2 | 3 | 3 |
| 1 | 2 | 3 | 1 | 2 | 2 | 4 | 3 | 1 | 3 |
| 4 |   | 3 | 3 |   | 1 | 5 | 2 |   | 6 |
| 1 | 2 | 3 | 2 | 3 | 2 | 6 | 8 | 3 | 1 |
| 1 | 2 | 2 | 2 | 1 | 2 | 8 | 6 | 5 | 3 |
| 1 | 2 | 7 | 1 | 2 | 1 | 8 | 6 | 5 | 3 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 5 | 6 | 3 | 7 | 3 | 5 | 2 |   |
| 6 | 7 | 5 | 6 | 3 | 2 | 3 | 1 | 4 | 5 |
| 9 | 2 | 2 | 3 | 3 | 4 | 5 | 7 | 1 | 3 |
| 2 | 9 | 7 | 5 | 1 | 2 | 3 | 6 | 1 | 5 |
| 4 | 6 | 1 | 4 | 5 | 9 | 4 | 2 | 3 | 4 |
| 3 | 2 | 2 | 1 | 2 | 4 | 6 | 5 | 6 | 4 |
| 7 | 3 | 1 | 6 | 4 | 8 | 9 | 2 | 5 | 6 |
| 5 | 4 | 2 | 1 | 2 | 6 | 3 | 4 | 1 | 6 |
| 2 | 6 | 4 | 2 | 6 | 9 | 1 | 5 | 2 | 3 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 3 | 3 | 4 | 5 | 6 | 1 | 4 | 7 |
| 4 | 5 | 3 | 3 | 4 | 5 | 6 | 2 | 2 | 6 |
| 1 | 5 | 2 | 1 | 5 | 6 | 9 | 5 | 5 | 3 |
| 1 | 3 | 1 | 3 | 7 | 9 | 1 | 5 | 5 | 3 |
| 1 | 2 | 3 | 1 | 3 | 1 | 2 | 2 | 1 | 2 |
| 2 | 3 | 3 | 8 | 2 | 3 | 7 | 4 | 1 | 3 |
| 6 | 1 | 1 | 4 | 5 | 3 | 1 | 5 | 5 | 2 |
| 1 | 2 | 5 | 1 | 2 | 7 | 1 | 2 | 3 | 4 |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 6 | 1 | 2 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 1 | 3 | 1 | 3 | 2 | 1 | 5 | 4 |
| 5 | 6 | 5 | 5 | 5 | 6 | 6 | 4 | 1 | 2 |
| 7 | 8 | 9 | 7 | 9 | 8 | 9 | 7 | 9 | 7 |
| 1 | 5 | 1 | 2 | 5 | 4 | 1 | 5 | 7 | 3 |
| 3 | 6 | 3 | 3 | 5 | 2 | 4 | 7 | 1 |   |
| 1 | 3 | 1 | 3 | 1 | 3 | 7 | 1 | 3 | 1 |
| 2 | 1 | 3 | 7 | 4 | 1 | 3 | 1 | 6 | 5 |
| 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| 1 | 3 | 8 | 1 | 2 | 3 | 1 | 2 | 1 | 3 |
| 1 | 4 | 6 | 9 | 1 | 2 | 3 | 8 | 2 | 3 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | 3 | 4 | 1 | 1 | 3 | 8 | 1 | 1 |
| 7 | 1 | 5 | 1 | 1 | 2 | 2 | 8 | 1 | 2 |
|   | 1 | 3 |   | 6 | 9 | 2 | 4 | 1 | 5 |
| 3 | 4 | 2 | 7 | 1 | 2 | 1 | 6 | 2 | 2 |
| 5 | 4 | 2 | 5 | 3 | 6 | 7 | 1 | 2 | 1 |
| 1 | 6 | 5 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| 5 | 6 | 7 | 5 | 6 | 4 | 5 | 1 | 5 | 4 |
| 4 | 1 | 1 | 3 | 2 | 5 | 8 | 2 | 9 | 7 |
| 5 | 6 | 8 | 2 | 4 | 5 | 6 | 9 | 3 | 1 |

|                          |                        |                     |                          |                       |                     |                          |                     |                     |                   |
|--------------------------|------------------------|---------------------|--------------------------|-----------------------|---------------------|--------------------------|---------------------|---------------------|-------------------|
| 1                        | <sup>2 3</sup><br>5 6  | <sup>3</sup><br>5 6 | <sup>2</sup><br>4 5<br>8 | 9                     | <sup>4 5</sup><br>8 | <sup>2 3</sup><br>4 5 6  | 7                   | <sup>4 5</sup><br>6 | <sup>3</sup>      |
| 2                        | <sup>2</sup><br>5<br>8 | 4                   | 7                        | 6                     | 3                   | <sup>1 2</sup><br>5      | 9                   | <sup>1</sup><br>5   |                   |
| 9                        | <sup>2 3</sup><br>5 6  | 7                   | <sup>2</sup><br>4 5      | <sup>2</sup><br>4 5   | 1                   | <sup>2 3</sup><br>4 5 6  | <sup>4 5</sup><br>3 | 8                   |                   |
| <sup>3</sup><br>4<br>7 8 | <sup>1</sup><br>4<br>8 | 2                   | <sup>4 5</sup><br>3      | <sup>4 5</sup><br>7   | <sup>3</sup><br>6   | 9                        | <sup>1</sup><br>8   | <sup>4 5</sup><br>7 | <sup>3</sup>      |
| 5                        | 9                      | <sup>3</sup><br>6   | 1                        | 8                     | <sup>4</sup><br>7   | <sup>4</sup><br>3<br>6   | 2                   | <sup>4</sup><br>7   | <sup>3</sup><br>6 |
| <sup>3</sup><br>4<br>7 8 | <sup>1</sup><br>6<br>4 | <sup>3</sup><br>6   | <sup>2 3</sup><br>4 5    | <sup>2 3</sup><br>4 5 | 9                   | <sup>4 5</sup><br>3<br>6 | <sup>1</sup><br>8   | <sup>4 5</sup><br>6 | <sup>3</sup>      |
| <sup>2 3</sup><br>4      | <sup>2 3</sup><br>4 5  | 1                   | 6                        | <sup>4 5</sup><br>7   | <sup>3</sup><br>4 5 | 8                        | <sup>4 5</sup><br>3 | 9                   |                   |
| <sup>3</sup><br>4<br>8   | <sup>7</sup><br>9      | <sup>4 5</sup><br>3 | <sup>4 5</sup><br>8      | 2                     | <sup>1</sup><br>4 5 | <sup>3</sup><br>6        | <sup>1</sup><br>4 5 | <sup>3</sup>        |                   |
| <sup>3</sup><br>4<br>8   | <sup>4 5</sup><br>6    | <sup>3</sup><br>5 6 | 9                        | 1                     | <sup>4 5</sup><br>8 | 7                        | <sup>4 5</sup><br>3 | 2                   |                   |

|                   |                       |                        |                            |                        |                        |                        |                     |                     |  |
|-------------------|-----------------------|------------------------|----------------------------|------------------------|------------------------|------------------------|---------------------|---------------------|--|
| 1                 | <sup>2 3</sup><br>8   | <sup>2 3</sup><br>8    | <sup>2 3</sup><br>4<br>7   | 5                      | <sup>2 3</sup><br>7    | 6                      | <sup>4</sup><br>8   | 9                   |  |
| 4                 | 5                     | 6                      | 1                          | 8                      | 9                      | 3                      | 2                   | 7                   |  |
| 7                 | <sup>2 3</sup><br>8 9 | <sup>2 3</sup><br>8 9  | <sup>2 3</sup><br>4        | <sup>2 3</sup><br>4    | 6                      | <sup>1</sup><br>4 5    | <sup>4 5</sup><br>8 | <sup>1</sup><br>5   |  |
| <sup>2</sup><br>5 | <sup>1 2</sup><br>9   | <sup>1 2</sup><br>5    | <sup>2 3</sup><br>7 8 9    | <sup>2 3</sup><br>7    | <sup>2 3</sup><br>7 8  | <sup>2</sup><br>5      | 6                   | 4                   |  |
| 3                 | 7                     | <sup>2</sup><br>5<br>9 | 6                          | <sup>2</sup><br>9      | 4                      | <sup>2</sup><br>5<br>9 | 1                   | 8                   |  |
| 8                 | 6                     | 4                      | <sup>2</sup><br>5<br>7     | <sup>2</sup><br>1<br>9 | <sup>2</sup><br>3<br>7 | <sup>2</sup><br>5<br>7 | 3                   | <sup>2</sup><br>5   |  |
| <sup>2</sup><br>5 | 4                     | <sup>2</sup><br>5      | <sup>7</sup><br>9          | 6                      | 1                      | 8                      | <sup>7</sup><br>9   | 3                   |  |
| 6                 | <sup>1</sup><br>8     | <sup>3</sup><br>7      | <sup>2 3</sup><br>4<br>8 9 | <sup>2 3</sup><br>4    | <sup>2 3</sup><br>9    | <sup>1 2</sup><br>4 5  | <sup>4 5</sup><br>9 | <sup>1 2</sup><br>5 |  |
| 9                 | <sup>1</sup><br>8     | <sup>3</sup><br>1      | <sup>2 3</sup><br>4<br>7 8 | <sup>2 3</sup><br>4    | <sup>2 3</sup><br>5    | <sup>1 2</sup><br>4    | <sup>4</sup><br>7   | 6                   |  |

|                        |                       |                     |                       |                         |                           |                            |                       |                          |  |
|------------------------|-----------------------|---------------------|-----------------------|-------------------------|---------------------------|----------------------------|-----------------------|--------------------------|--|
| <sup>5</sup><br>7      | 3                     | <sup>5</sup><br>8   | 6                     | 4                       | <sup>1</sup><br>7 8       | <sup>1</sup><br>5<br>7 8 9 | 2                     | <sup>1</sup><br>5<br>7 8 |  |
| 1                      | <sup>4</sup><br>7 8 9 | 2                   | <sup>7</sup><br>9     | 5                       | <sup>7</sup><br>8         | <sup>6</sup><br>7 8        | 3                     | <sup>4</sup><br>7 8      |  |
| <sup>4 5 6</sup><br>7  | <sup>4</sup><br>7 8 9 | <sup>5 6</sup><br>8 | <sup>1 2</sup><br>7   | <sup>1 2 3</sup><br>8 9 | <sup>1 2 3</sup><br>7 8   | <sup>1</sup><br>5 6        | <sup>5 6</sup><br>8 9 | <sup>4 5</sup><br>7 8    |  |
| 8                      | <sup>1 2</sup><br>6   | <sup>1</sup><br>5 6 | 3                     | <sup>1 2</sup><br>6     | <sup>1 2</sup><br>4 5 6   | <sup>2</sup><br>4 5        | 7                     | 9                        |  |
| 3                      | <sup>1 2</sup><br>7   | 9                   | <sup>1 2</sup><br>4 5 | <sup>1 2</sup><br>8     | <sup>1 2</sup><br>4 5 7 8 | <sup>2</sup><br>4 5        | <sup>5</sup><br>8     | 6                        |  |
| <sup>2</sup><br>5 6    | <sup>2</sup><br>7     | <sup>6</sup><br>4   | <sup>2</sup><br>5     | <sup>2</sup><br>6       | <sup>2</sup><br>5 6       | 3                          | 1                     | <sup>2</sup><br>5        |  |
| <sup>2</sup><br>6      | <sup>1 2</sup><br>8 9 | <sup>1</sup><br>6   | <sup>4 5</sup><br>7   | <sup>4 5</sup><br>8     | <sup>1 2</sup><br>6       | <sup>6</sup><br>9          | 3                     |                          |  |
| <sup>2</sup><br>4      | <sup>1 2</sup><br>6   | 3                   | 8                     | <sup>1 2</sup><br>6     | 9                         | <sup>1 2</sup><br>5 6      | <sup>1 2</sup><br>7   | <sup>5</sup>             |  |
| <sup>2</sup><br>6<br>9 | 5                     | 7                   | <sup>1 2</sup><br>6   | <sup>1 2 3</sup><br>7   | <sup>1 2 3</sup><br>4 5 6 | <sup>1 2</sup><br>6        | 4                     | <sup>1 2</sup><br>8      |  |

|                     |                          |                       |                     |                     |                            |                          |                   |                     |                            |
|---------------------|--------------------------|-----------------------|---------------------|---------------------|----------------------------|--------------------------|-------------------|---------------------|----------------------------|
| <sup>6</sup><br>8 9 | 3                        | <sup>2</sup><br>7 8 9 | <sup>2</sup><br>6   | <sup>2</sup><br>7   | <sup>2</sup><br>9          | <sup>1</sup><br>5 6<br>9 | 4                 | <sup>5</sup><br>7 8 | <sup>1</sup><br>5 6        |
| <sup>6</sup><br>9   | <sup>5 6</sup><br>7      | <sup>6</sup><br>4     | <sup>3</sup><br>9   | 8                   | <sup>1</sup><br>4 5 6<br>9 | <sup>3</sup><br>7        | 2                 | <sup>5</sup><br>3   | <sup>1</sup><br>5 6        |
| 1                   | <sup>2</sup><br>5 6<br>8 | 4                     | <sup>2 3</sup><br>7 | <sup>2 3</sup><br>6 | <sup>3</sup><br>5 6        | <sup>6</sup><br>9        | 9                 | <sup>5</sup><br>8   | <sup>3</sup>               |
| <sup>3</sup><br>4   | <sup>6</sup><br>9        | 7                     | <sup>6</sup><br>4 5 | <sup>3</sup><br>9   | <sup>1</sup><br>4          | <sup>3</sup><br>9        | 8                 | <sup>1</sup><br>6   | <sup>2</sup><br>4 5 6<br>9 |
| 2                   | 1                        | 5                     | 6                   | <sup>4</sup><br>9   | <sup>3</sup><br>7          | <sup>3</sup><br>4        | 7                 | <sup>3</sup><br>9   | <sup>4</sup><br>8          |
| <sup>3</sup><br>4   | <sup>6</sup><br>8 9      | <sup>4</sup><br>6     | <sup>6</sup><br>8 9 | <sup>3</sup><br>4 5 | <sup>1</sup><br>4          | <sup>3</sup><br>9        | 2                 | <sup>1</sup><br>6   | <sup>3</sup><br>4 5 6<br>9 |
| 5                   | 9                        | 3                     | <sup>4</sup><br>7   | <sup>2</sup><br>4   | <sup>2</sup><br>6          | <sup>4</sup><br>6        | 8                 | 1                   | <sup>2</sup><br>4          |
| <sup>4</sup><br>8   | <sup>6</sup><br>4        | <sup>2</sup><br>8     | <sup>2</sup><br>6   | <sup>1</sup><br>4   | <sup>2 3</sup><br>9        | <sup>3</sup><br>4        | 5                 | <sup>3</sup><br>4   | 7                          |
| 7                   | <sup>4</sup><br>2        | 1                     | 8                   | 5                   | <sup>4</sup><br>3          | <sup>3</sup><br>9        | <sup>6</sup><br>4 | <sup>2 3</sup><br>9 |                            |

|                            |                            |                   |                     |                     |                     |                            |                       |                       |                     |
|----------------------------|----------------------------|-------------------|---------------------|---------------------|---------------------|----------------------------|-----------------------|-----------------------|---------------------|
| <sup>4 5</sup><br>8        | <sup>3</sup><br>2          | 9                 | <sup>3</sup><br>7 8 | <sup>3</sup><br>6   | <sup>1</sup><br>4   | <sup>1</sup><br>4 5<br>7 8 | <sup>4 5</sup><br>7 8 |                       |                     |
| <sup>3</sup><br>5<br>8     | <sup>1</sup><br>5          | <sup>3</sup><br>1 | <sup>3</sup><br>2 3 | <sup>1</sup><br>5   | <sup>2</sup><br>4   | <sup>7</sup><br>8          | 6                     | 9                     | <sup>5</sup><br>7 8 |
| 7                          | <sup>4</sup><br>6          | <sup>6</sup><br>8 | 1                   | 5                   | 9                   | <sup>3</sup><br>4          | <sup>2</sup><br>8     |                       | <sup>2</sup><br>8   |
| <sup>4</sup><br>8          | <sup>6</sup><br>4          | <sup>6</sup><br>9 | <sup>2</sup><br>6   | <sup>2</sup><br>4   | <sup>6</sup><br>9   | 1                          | 5                     | 7                     | <sup>3</sup><br>4   |
| <sup>3</sup><br>4 5 6<br>8 | <sup>3</sup><br>4 5 6<br>9 | <sup>5</sup><br>7 | <sup>4</sup><br>6   | <sup>2</sup><br>7   | <sup>6</sup><br>4   | <sup>1 2</sup><br>4        | <sup>1</sup><br>4     | <sup>6</sup><br>8     | <sup>4</sup><br>6   |
| 1                          | 7                          | <sup>2</sup><br>6 | <sup>4</sup><br>2   | <sup>6</sup><br>8   | 3                   | 5                          | <sup>4</sup><br>2     | 9                     |                     |
| 2                          | <sup>3</sup><br>5<br>8     | 4                 | <sup>3</sup><br>7 8 | <sup>3</sup><br>7   | 6                   | 9                          | <sup>5</sup><br>7     | 1                     |                     |
| <sup>3</sup><br>6          | <sup>1</sup><br>6          | <sup>3</sup><br>7 | 5                   | 9                   | <sup>1 2</sup><br>4 | 8                          | <sup>2</sup><br>4     | <sup>2 3</sup><br>6   |                     |
| 9                          | <sup>1</sup><br>5 6<br>8   | <sup>3</sup><br>7 | <sup>2 3</sup><br>4 | <sup>1</sup><br>7 8 | <sup>2</sup><br>4   | <sup>4</sup><br>7          | <sup>4 5 6</sup><br>7 | <sup>3</sup><br>4 5 6 |                     |

|                     |                       |                            |                          |                        |                        |                          |                        |                     |                       |
|---------------------|-----------------------|----------------------------|--------------------------|------------------------|------------------------|--------------------------|------------------------|---------------------|-----------------------|
| <sup>2 3</sup><br>7 | <sup>4 5 6</sup><br>8 | <sup>2</sup><br>4 5 6<br>9 | <sup>3</sup><br>6<br>9   | 1                      | <sup>2</sup><br>6<br>9 | <sup>3</sup><br>5 6<br>9 | <sup>2 3</sup><br>7    |                     |                       |
| 9                   | <sup>4 5 6</sup><br>7 | <sup>5 6</sup><br>7        | <sup>2</sup><br>4 5 6    | <sup>3</sup><br>6      | <sup>4</sup><br>6      | 1                        | <sup>5</sup><br>7      | <sup>3</sup><br>7 8 | <sup>2 3</sup><br>9   |
| <sup>2 3</sup><br>1 | <sup>5 6</sup><br>8 9 | <sup>2</sup><br>5 6<br>9   | <sup>3</sup><br>6<br>8 9 | 7                      | 4                      | <sup>5</sup><br>6<br>9   | <sup>3</sup><br>8 9    |                     |                       |
| <sup>1</sup><br>4   | <sup>6</sup><br>8     | <sup>6</sup><br>8 9        | <sup>1</sup><br>6        | <sup>3</sup><br>6<br>9 | 7                      | <sup>4</sup><br>6<br>9   | <sup>3</sup><br>6<br>9 | 2                   | 5                     |
| <sup>4</sup><br>6   | <sup>5 6</sup><br>9   | <sup>5 6</sup><br>9        | <sup>4</sup><br>6<br>9   | <sup>3</sup><br>2      | 8                      | <sup>3</sup><br>6<br>9   | <sup>1</sup><br>7      |                     |                       |
| 7                   | 3                     | 2                          | 1                        | <sup>6</sup><br>9      | 5                      | 8                        | <sup>4</sup><br>6<br>9 | <sup>4</sup><br>9   |                       |
| <sup>1</sup><br>8   | <sup>6</sup><br>7 8 9 | <sup>1</sup><br>7          | <sup>6</sup><br>9        | <sup>3</sup><br>6<br>9 | 5                      | <sup>2</sup><br>6<br>9   | <sup>1</sup><br>4      | <sup>3</sup><br>9   | <sup>1 2 3</sup><br>4 |
| <sup>1</sup><br>6   | <sup>6</sup><br>7     | <sup>6</sup><br>9          | 3                        | <sup>6</sup><br>7      | 4                      | 2                        | 5                      | 8                   | <sup>1</sup><br>9     |
| 5                   | 2                     | 4                          | 8                        | 1                      | <sup>3</sup><br>9      | 7                        | <sup>3</sup><br>9      | 6                   |                       |

|                       |             |               |                   |
|-----------------------|-------------|---------------|-------------------|
| 1 3 1 3 4             | 7 9 8       | 1 3 1 2 3 6   | 2 6 2 5           |
| 2                     | 7 8 9 8 9   | 4 5 3 6       | 7 8 9 7 9 1 8 6   |
| 1 5 6                 | 1 5 8 9     | 1 1 2         | 2 2 4 3 7 8 9 7 9 |
| 1 4                   | 1 2 4 8     | 7 3 6 4 8     | 1 2 4 5 9         |
| 4 5 6 9               | 4 5 9 5 6 9 | 1 2 4 9       | 3 8 7             |
| 1 3 1 2 3 1 2 3 4     | 9 4 8 9 8 9 | 5 7 4 8 9     | 1 2 2 1 6 4 6     |
| 1 3 1 2 3 1 2 3 4 5 9 | 4 5 5 9     | 2 1 4 8       | 1 4 8 9 6 4 8     |
| 1 4 6 7               | 1 4 7 1 6   | 6 9 5 8       | 1 4 7 8 3 2       |
| 8                     | 2 2 6 9     | 2 1 3 1 3 6 4 | 5 1 4 7 9         |

|     |     |     |       |     |       |     |       |       |
|-----|-----|-----|-------|-----|-------|-----|-------|-------|
| 8   | 2   | 2 3 | 1     | 1   | 1     | 4   | 3     | 3     |
| 7   | 7   | 5   | 6     | 5 6 | 5 6   | 7   | 5     | 5 6   |
| 9   | 6   | 4 5 | 3     | 5   | 4 5   | 5   | 5     | 2     |
| 7   | 7   | 7   | 7 8 9 | 8 9 | 8     | 9   | 7 8 9 | 7 8 9 |
| 9   | 4   | 3   | 4     | 6   | 4 5 6 | 3   | 5     | 1     |
| 7   | 7   | 7   | 7 8   | 8   | 8     | 5 6 | 7 8   | 7 8   |
| 5 6 | 3   | 4   | 1     | 1   | 9     | 2   | 4 5   | 8     |
| 7   | 7   | 6   | 4     | 6   | 7     | 6   | 4 5   | 7     |
| 2   | 1 2 |     | 2     | 3   | 2 3   | 1   | 3     |       |
| 5 6 | 4   | 9   | 4     | 6   | 6     | 4   | 5     | 7     |
|     |     |     | 8     | 8   | 8     |     |       |       |
| 2   | 1 2 |     |       | 3   | 2 3   | 1   | 3     | 3     |
| 7   | 4   | 8   | 5     | 7   | 4     |     | 9     | 4     |
| 7   | 7   |     |       |     |       |     |       | 9     |
| 2 3 |     | 2   | 2     |     | 2 3   | 3   |       | 3     |
| 6   | 5   | 6   | 6     | 4   | 6     | 6   | 1     | 6     |
| 7   | 7   | 8 9 | 8 9   | 8   | 9     | 9   |       | 9     |
| 4   | 9   | 1 2 | 1 2   | 1   | 3     | 8   | 2 3   | 3     |
|     |     | 6   | 6     | 5 6 | 5 6   |     | 5     | 5 6   |
| 2 3 |     | 1 2 | 1 2   | 1   | 3     | 7   | 2 3   | 3     |
| 6   | 8   | 6   | 6     | 5 6 | 5 6   |     | 4 5   | 4 5 6 |
|     |     | 9   | 9     | 9   | 9     |     | 9     | 9     |

|                   |                 |                         |             |
|-------------------|-----------------|-------------------------|-------------|
| 7                 | 5 9 5 9         | 3 2 6 4                 | 1 2 6 8     |
| 2 6 1             | 2 8 7           | 9 2 6 4 5 7 8           | 3 4 5       |
| 2 3 6 4           | 2 3 1 2 1 2 6 8 | 5 9 7 6 7 9             |             |
| 3 3 6 4           | 1 3 1 9         | 2 2 2 5 7 7             |             |
| 4 5 1             | 8 2 5 7         | 3 9 6                   |             |
| 2 3 5 9           | 3 5 5 9         | 6 7 5 7 9               | 8 4 1       |
| 1 3 9 2           | 4 7 9 3         | 5 1 6 7 8 7 8           | 4 6 9 8 4 9 |
| 1 3 5 9           | 3 5 6 4 5 9     | 1 2 1 2 6 1 2 6 7 1 4 9 | 2 3 8 9     |
| 1 8 9 7 8 9 7 8 9 | 1 2 7 9         | 4 3 2 6 5 9             |             |

|             |                       |                   |                 |
|-------------|-----------------------|-------------------|-----------------|
| 1 4 7 9     | 6 2                   | 3 3 8 9 8 9 7 8 9 | 1 3 1 4 7 9 5   |
| 1 5 7 9     | 1 5 3 5 3 7 9         | 3 3 5 6 9 7 9     | 8 1 2 6 1 2 7 9 |
| 8           | 4 5 3 4 5 7 9         | 3 3 5 6 9         | 2 1 4 6 6 4 7 9 |
| 6 7         | 4 5 8 9 2 5 8 9       | 4 2 5 4 2 8 9     | 1 2 5 3 1 2 9   |
| 4 5 9 4 5 8 | 1 4 8 9 2 7 3         | 2 5 6 2 5 6 9     | 2 9             |
| 3           | 2 5 5 9               | 1 5 6 9 2 6 9     | 7 4 8           |
| 1 4 5       | 1 3 4 5 8 4 5 8       | 7 1 3 4 8         | 9 5 8 6         |
| 1 4 7       | 1 4 8 7 8 4 6 8 9 8 9 | 2 1 6 8 9 5       | 1 2 1 2 7 8 3   |
| 2 9         | 4 5 6 7 8 3 8 8       | 3 1 3 6 4 6 8     | 1 1 5 4 7 8 1   |

|             |                               |                         |
|-------------|-------------------------------|-------------------------|
| 1 2 5 6 4   | 2 5 6 9 5 6 8 9 7             | 2 3 1 3 1 3 3 8 6 6 5 6 |
| 7           | 1 5 3 4 5 6 4 6 4 6 8 8 8     | 1 6 9 2 8 6 8 3 5 6     |
| 8           | 2 5 2 5 6 9 5 6 9 1           | 4 7 6 5 6 7 3           |
| 5 3 6 7     | 2 4 5 3 4 3 8 8               | 1 3 1 3 9 8             |
| 9           | 2 3 5 8 4 1 5 6 8 6 7 8 7 8   | 2 3 2 3 3 6 6 7 8       |
| 2 3 2 3 8   | 1 8 6 9 7 2 3 6 8             | 5 4                     |
| 1 2 5 6 7 9 | 1 2 5 8 9 2 4 6 4 6 7 9 7     | 2 6 4 6 7 6             |
| 4           | 1 2 3 7 9 2 6 7 6 5 7 9 8 7 6 | 2 3 6 8 3 6             |
| 2 3 6 7 9   | 2 6 4 8 6 4 6 8 9 5 4 7 6     | 5 2 3 1                 |

|         |                   |                         |                           |
|---------|-------------------|-------------------------|---------------------------|
| 5 8     | 2 6 3             | 1 4 8 9 1 4 5 6 1 5 8 9 | 2 5 9 7 4 5 8 9           |
| 5 7 8   | 1 9               | 2 4 5 7 5 7 8           | 5 3 4 3 6                 |
| 5 7 8   | 4 2 6 3           | 5 6 7 8 9 5             | 1 2 5 8 9                 |
| 1 3 9   | 1 2 5 8 1 2 5 8   | 7 1 2 5 8 4             | 2 3 1 2 3 1 2 3 5 6 6 5   |
| 6       | 2 3 5 8 7 1 2 5 8 | 1 1 2 5 1 2 5 8 9       | 4 1 2 3 1 2 3 5 9 7 9     |
| 1 4     | 2 5 1 2 4 5 7     | 1 3 6 9                 | 2 5 8 1 2 5 7 9           |
| 1 4 9   | 7 4 8 1 4 8       | 6 4 8 3                 | 2 5 9 5 1 2 9             |
| 1 3 4 9 | 3 1 5 6 4 5 6 1 4 | 1 2 4 7 1 2 7           | 8 4 6 4 9 7 9 1 2 3 1 2 3 |
| 2 8     | 3 1 6 4 6 5 9     | 1 7 8 1 7 8             | 7 3 1 3 1 3 6 4 6 4 7     |



|               |               |                 |                 |            |               |   |          |             |
|---------------|---------------|-----------------|-----------------|------------|---------------|---|----------|-------------|
| 1 2<br>4      | 2 3<br>4 5    | 2 3<br>4 5      | 1 3<br>4 5      | 7          | 1 3<br>4 5    | 4 | 8        | 6           |
| 4<br>8 9      | 7             | 4 5<br>8 9      | 4 5 6<br>8      | 2          | 4 5 6<br>8 9  | 4 | 3        | 1           |
| 1<br>4        | 3<br>4        | 6               | 1 3<br>4        | 3<br>8 9   | 1 3<br>4      | 5 | 2<br>7   | 2<br>7      |
| 3             | 1             | 2<br>4          | 9               | 4 6<br>4 6 | 2<br>6        | 8 | 5<br>7   | 5<br>7      |
| 2<br>6<br>8   | 2<br>5 6<br>8 | 2<br>5<br>8     | 2 3<br>5<br>8   | 3<br>8     | 7             | 1 | 9        | 4           |
|               | 4 5<br>8      |                 | 4 5<br>8        | 1          | 4 5           | 2 | 6        | 3           |
| 7<br>9        | 4 5<br>8      | 7<br>9          |                 |            |               |   |          |             |
| 2<br>4        | 2 3<br>4 6    | 1               | 2 3<br>4 6      | 5          | 8             | 7 | 2<br>4   | 9           |
| 2<br>4<br>7 8 | 6<br>9        | 2<br>4<br>7 8   | 1 2<br>4 6<br>7 | 4 6<br>4 6 | 1 2<br>4 6    | 3 | 2<br>4 5 | 2<br>5<br>8 |
| 5             | 2 3<br>4<br>8 | 2 3<br>4<br>7 8 | 2 3<br>4<br>7   | 3<br>9     | 2 3<br>4<br>9 | 6 | 1        | 2<br>8      |

|        |        |        |             |             |             |        |             |             |             |             |        |             |        |        |
|--------|--------|--------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|--------|-------------|--------|--------|
|        | 3<br>9 | 1<br>5 | 3<br>8      | 5<br>8      | 7           | 6      | 2           | 4<br>9      | 5<br>9      | 1<br>4      | 8<br>9 | 1<br>4      | 5<br>8 | 9      |
| 4      | 1<br>5 | 6      | 7           | 3           | 5<br>9      |        | 8<br>9      | 2<br>5<br>9 | 6<br>9      | 1<br>2<br>8 | 9      | 1<br>5<br>8 | 6<br>8 | 9      |
| 2<br>9 | 2<br>5 | 6      | 2<br>5<br>8 | 6           | 4<br>8      | 5<br>9 | 4<br>5<br>9 | 1           | 3           | 7           |        | 5<br>8      | 6<br>9 |        |
| 8      | 4<br>7 | 3<br>6 | 9           | 4<br>5      | 2           | 4<br>7 | 3<br>9      | 4<br>5<br>7 | 6           | 1<br>4      | 6      | 1<br>4      | 5<br>5 | 6<br>6 |
| 2<br>3 | 2<br>3 |        | 1           | 4<br>5      | 4<br>5<br>9 | 3<br>7 | 9           | 6           | 8           | 4<br>9      |        | 4<br>5<br>7 | 9      |        |
| 5      | 4<br>7 | 6      | 4           | 6           | 1           | 8      | 4<br>7      | 9           | 4<br>7      | 6<br>9      | 3      | 2           |        |        |
| 1      | 8      | 4      | 2           | 4<br>6<br>9 | 4<br>7      | 9      | 5           | 4<br>7      | 2<br>6<br>9 | 4<br>6<br>9 | 2<br>9 | 3           |        |        |
| 6      | 4<br>5 | 2<br>3 | 4<br>5      | 4<br>8      | 2<br>9      | 3<br>7 | 9           | 4<br>7      | 1           | 2<br>8      | 9      | 4<br>7      | 8      | 9      |
| 7      | 9      | 4      | 2<br>3      | 2<br>4      | 6<br>8      | 1      | 4<br>8      | 3<br>4      | 2<br>6      | 5           |        | 4<br>8      | 6      |        |

|              |          |          |          |            |          |            |            |            |          |   |          |          |   |   |   |
|--------------|----------|----------|----------|------------|----------|------------|------------|------------|----------|---|----------|----------|---|---|---|
| 2<br>4       | 7        | 8        | 2<br>7   | 8          | 9        | 4          | 6<br>8     | 4<br>7     | 8        | 9 | 5        | 7        | 9 | 3 | 1 |
| 1 2 3        | 6        | 1 2 3    |          | 3          | 2 3      | 2 3        |            |            |          |   | 8        | 4        | 5 |   |   |
| 7            |          | 9        |          | 9          | 7        | 9          | 7          | 9          |          |   | 6        | 2        | 2 |   |   |
| 3<br>4       | 3<br>7   | 8        | 5        | 1          | 4<br>7   | 8          | 9          | 7          | 9        |   | 6        | 7        | 9 |   |   |
| 1 3<br>7     | 3<br>8   | 1 3<br>7 | 8        | 6          | 2<br>8 9 | 3<br>9     | 3<br>9     | 1 3<br>9   |          |   | 5        | 4        |   |   |   |
| 2 3<br>5     | 9        | 2 3<br>8 | 4 5<br>8 | 3<br>1     | 4        |            |            | 2 3        |          |   | 6        | 7        |   |   |   |
| 1 2 3<br>5 6 | 1<br>5   | 3<br>4   | 7        | 3<br>5 6   |          | 3<br>6     | 1 2 3<br>6 |            |          |   | 9        | 8        |   |   |   |
| 1 3<br>4     | 3<br>5 6 | 1 3<br>4 | 5 6      | 4 5 6<br>7 | 2 3<br>7 | 8          | 7          | 5<br>9     | 7        | 9 | 1 2<br>7 | 2 3<br>9 |   |   |   |
| 9            | 1 3<br>4 | 3<br>5 6 | 1 3<br>8 | 3<br>4 5 6 | 2 3<br>7 | 1 2 3<br>6 | 5<br>7     | 1 2<br>7 8 | 2 3<br>9 |   |          |          |   |   |   |
| 1 3<br>5     | 8        | 2        | 7        | 5<br>9     | 3<br>5   | 9          | 4          | 1<br>8     |          |   | 6        |          |   |   |   |

|          |          |          |          |          |            |        |        |          |               |                 |        |        |  |  |  |
|----------|----------|----------|----------|----------|------------|--------|--------|----------|---------------|-----------------|--------|--------|--|--|--|
| 2<br>4   | 5        | 1 2<br>5 | 6        | 1 2<br>4 | 5<br>8     | 2<br>5 | 8      | 9        | 3             | 7               | 4<br>8 |        |  |  |  |
| 8        | 4        | 2 3<br>5 | 7        | 2 3<br>5 | 2<br>7     | 5      | 3<br>6 | 9        | 1<br>6        |                 | 9      | 1<br>6 |  |  |  |
|          | 3 1<br>7 | 3<br>8   | 9        | 1<br>4   | 3<br>7 8   |        | 6      | 5        | 2             | 4<br>8          |        |        |  |  |  |
| 2 3<br>4 | 5<br>9   | 2 3<br>5 | 8        | 5<br>9   | 3<br>6     | 1<br>4 | 3<br>7 | 7        | 5<br>6        | 2 3<br>5 6<br>9 |        |        |  |  |  |
| 5<br>7   | 3<br>9   | 3<br>7   | 5<br>7   | 5<br>8 9 | 3<br>7 8 9 | 2<br>9 | 1<br>6 | 4        | 1<br>5 6<br>9 | 3<br>5 6<br>9   |        |        |  |  |  |
| 1        | 6        | 4 5<br>7 | 2 3<br>9 | 5<br>7   | 3<br>9     | 4<br>7 | 8      | 2<br>9   | 8             | 2 3<br>5<br>9   |        |        |  |  |  |
| 2<br>4   | 9        | 4 5      | 2<br>4   | 1<br>8   | 3<br>6     | 1<br>8 | 4<br>6 | 5 6      | 7             |                 |        |        |  |  |  |
| 4<br>7   | 3<br>8   | 4<br>7   | 3<br>6   | 2<br>6   | 2<br>6     | 5      | 4<br>9 | 1        | 3<br>9        |                 |        |        |  |  |  |
| 6        | 2 3<br>5 | 1        | 7        | 4        | 9          | 8      | 5<br>3 | 2 3<br>5 |               |                 |        |        |  |  |  |

|          |            |          |          |                   |          |            |                   |            |          |        |        |        |   |   |   |
|----------|------------|----------|----------|-------------------|----------|------------|-------------------|------------|----------|--------|--------|--------|---|---|---|
| 9        | 1 3<br>4   | 6        | 7        | 1 2<br>4          | 6        | 5          | 1 4<br>6          | 2 3<br>6   | 8        | 4<br>6 |        |        |   |   |   |
| 1 3<br>4 | 2          | 1 4<br>6 |          | 1 4<br>8          | 6        | 4          | 6                 | 4          | 6        | 8 9    | 7      | 5      | 4 | 9 | 5 |
| 4        | 4          | 6        | 5        | 7                 | 4        | 6          | 3                 | 2<br>9     | 6        | 4      | 9      | 1      |   |   |   |
| 1<br>4   | 5<br>8     | 1<br>4   | 5 6<br>8 | 1<br>4            | 5 6<br>8 | 7          | 2                 | 3<br>9     | 4        | 3<br>9 | 4      | 3<br>6 |   |   |   |
| 4 5<br>7 | 4 5 6<br>7 | 9        | 4 5 6    | 3                 | 4 5 6    | 8          | 1                 | 2          |          |        |        |        |   |   |   |
| 2        | 1<br>4     | 6        | 3        | 9                 | 8        | 1<br>4     | 6                 | 7          | 6        | 5      | 4<br>7 | 6      |   |   |   |
| 1 3<br>7 | 1<br>5     | 3<br>7   | 1 2      | 1 2<br>8          | 1<br>9   | 5<br>7 8 9 | 4                 | 6          | 5<br>8 9 |        |        |        |   |   |   |
| 1 3<br>4 | 5<br>7     | 9        | 1 2<br>4 | 1 2<br>4 5 6<br>8 | 1 2<br>4 | 6          | 1<br>4 5 6<br>7 8 | 1 2 3<br>5 | 2 3<br>8 | 3<br>5 |        |        |   |   |   |
| 6        | 1<br>4     | 5        | 8        | 3                 | 1 2<br>4 | 9          | 1<br>4 5          | 2<br>9     | 7        | 5<br>9 |        |        |   |   |   |

|          |            |          |          |          |          |            |          |          |          |             |          |        |        |   |   |   |
|----------|------------|----------|----------|----------|----------|------------|----------|----------|----------|-------------|----------|--------|--------|---|---|---|
| 6<br>9   | 1 3<br>6   | 9        | 5        | 1 3<br>8 | 9        | 1<br>4     | 3<br>5   | 1<br>8   | 9        | 1 3<br>7    | 8        | 9      | 4      | 7 | 6 | 2 |
| 7        | 1 2<br>4   | 6<br>9   | 8        | 1 2<br>5 | 1<br>4   | 5<br>9     | 1<br>4   |          |          | 5 6<br>9    | 5 6<br>9 |        | 3      |   |   |   |
| 4        | 2<br>9     | 2 3<br>4 |          | 3<br>8 9 | 6        | 4<br>7 8 9 | 3<br>7   | 5<br>9   | 5<br>8 9 | 7           | 5<br>9   | 7      | 1      |   |   |   |
| 4        | 8          | 9        | 3<br>8 9 | 3<br>6   | 1<br>8 9 | 1<br>4     | 5<br>8 9 | 5        |          | 3<br>6      | 2        | 4<br>7 |        |   |   |   |
| 2<br>4   | 5<br>8     | 4 5<br>8 |          | 6<br>9   | 7        | 3          | 4        | 8        |          | 6<br>9      | 1        | 4 5    |        |   |   |   |
| 1        | 4 5<br>9   | 3<br>7   | 3<br>9   | 6<br>9   | 2        | 4          | 6<br>9   | 8        |          | 3<br>6<br>9 | 4 5<br>7 |        |        |   |   |   |
| 5<br>8   | 5<br>7 8 9 | 4        | 1<br>5   | 3<br>8 9 | 1<br>5   | 2<br>8 9   | 1<br>5   | 3<br>8 9 | 6        | 2           | 1<br>7   | 5<br>7 | 3<br>6 |   |   |   |
| 5 6<br>8 | 5 6<br>7 8 | 1        | 4        | 5<br>8   |          | 3<br>8     | 2<br>7   | 5<br>3   |          | 2           | 5<br>7   | 3<br>9 |        |   |   |   |
| 3        | 5 6<br>9   | 2        | 1<br>5   | 6<br>9   | 7        | 1<br>6     | 9        |          |          | 1<br>5      | 4        | 8      |        |   |   |   |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 2                         | 8                         | 3                         | 9                         | 4                         | 6                         | <sup>1</sup> 5            | <sup>1</sup> 5            | 7                         |
| <sup>5</sup> <sub>9</sub> | <sup>5</sup> <sub>9</sub> | 6                         | <sup>2</sup> <sub>7</sub> | 1                         | <sup>2</sup> <sub>7</sub> | 3                         | 8                         | 4                         |
| <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>7</sub> | 1                         | 5                         | 3                         | 8                         | 2                         | 9                         | 6                         |
| 8                         | <sup>5</sup> <sub>9</sub> | <sup>3</sup> <sub>7</sub> | <sup>2</sup> <sub>4</sub> | 6                         | <sup>2</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> | 9                         |
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| 1                         | <sup>3</sup> <sub>9</sub> | 4                         | 8                         | <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>9</sub> | 6                         | <sup>2</sup> <sub>9</sub> | 5                         |
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| 3                         | 2                         | <sup>5</sup> <sub>8</sub> | <sup>4</sup> <sub>7</sub> | <sup>5</sup> <sub>9</sub> | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>5</sub> | 6                         | 1                         |
| 6                         | <sup>4</sup> <sub>7</sub> | <sup>5</sup> <sub>8</sub> | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | 1                         | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | 4                         | 9                         | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> |
| 8                         | <sup>2</sup> <sub>4</sub> | <sup>6</sup> <sub>9</sub> | 1                         | <sup>2</sup> <sub>6</sub> | 3                         | <sup>6</sup> <sub>9</sub> | 5                         | <sup>4</sup> <sub>6</sub> | <sup>2</sup> <sub>8</sub> |
| <sup>2</sup> <sub>4</sub> | 1                         | <sup>3</sup> <sub>9</sub> | 7                         | <sup>2</sup> <sub>6</sub> | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>6</sub> | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>8</sub> |
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| <sup>1</sup> <sub>4</sub> | <sup>6</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | 8                         | <sup>1</sup> <sub>3</sub> | 7                         | 2                         | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>6</sub> | <sup>6</sup> <sub>9</sub> |
| 3                         | <sup>2</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>6</sub> | 4                         | <sup>1</sup> <sub>9</sub> | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>6</sub> | 7                         | <sup>2</sup> <sub>9</sub> |
| 9                         | <sup>2</sup> <sub>4</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>5</sub> | 8                         | 6                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | 3                         | <sup>4</sup> <sub>7</sub> |
| <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | 6                         | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | 1                         | 8                         | <sup>1</sup> <sub>2</sub> | <sup>4</sup> <sub>5</sub> |
| <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | 7                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | 6                         | 9                         |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>1</sup> <sub>3</sub> | 2                         | 4                         | 6                         | 8                         | 5                         | <sup>7</sup> <sub>9</sub> | <sup>7</sup> <sub>9</sub> | <sup>1</sup> <sub>3</sub> |
| <sup>1</sup> <sub>5</sub> | 7                         | <sup>1</sup> <sub>5</sub> | 2                         | <sup>3</sup> <sub>4</sub> | 9                         | 6                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>5</sub> |
| 9                         | 6                         | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>3</sub> | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>8</sub> | 2                         |
| 2                         | 1                         | <sup>7</sup> <sub>6</sub> | 3                         | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>8</sub> | 9                         |
| <sup>3</sup> <sub>6</sub> | 5                         | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>8</sub> | 7                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>6</sub> |
| 4                         | 8                         | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>5</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>3</sub> |
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| <sup>6</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | <sup>6</sup> <sub>8</sub> | <sup>4</sup> <sub>9</sub> | 1                         | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>9</sub> | 5                         | 7                         |
| 7                         | <sup>4</sup> <sub>9</sub> | 2                         | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>6</sub> | <sup>1</sup> <sub>8</sub> | 3                         | <sup>1</sup> <sub>6</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>4</sup> <sub>9</sub> | <sup>3</sup> <sub>4</sub> | <sup>3</sup> <sub>9</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>5</sub> | 8                         | <sup>7</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>6</sub> | 2                         |
| 2                         | 6                         | <sup>8</sup> <sub>9</sub> | <sup>8</sup> <sub>9</sub> | <sup>2</sup> <sub>9</sub> | <sup>1</sup> <sub>5</sub> | 4                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>3</sub> |
| <sup>2</sup> <sub>3</sub> | 7                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>6</sub> | 9                         |
| <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>9</sub> | 4                         | <sup>5</sup> <sub>6</sub> | 2                         | <sup>5</sup> <sub>3</sub> | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>9</sub> | 8                         | <sup>3</sup> <sub>5</sub> |
| <sup>6</sup> <sub>7</sub> | <sup>2</sup> <sub>8</sub> | <sup>6</sup> <sub>8</sub> | <sup>4</sup> <sub>8</sub> | <sup>4</sup> <sub>6</sub> | <sup>1</sup> <sub>7</sub> | 1                         | <sup>4</sup> <sub>9</sub> | 3                         | 5                         |
| <sup>5</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> | 3                         | <sup>4</sup> <sub>5</sub> | <sup>4</sup> <sub>5</sub> | <sup>7</sup> <sub>9</sub> | 6                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> |
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| 1                         | <sup>4</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | <sup>2</sup> <sub>3</sub> | <sup>4</sup> <sub>6</sub> | <sup>3</sup> <sub>5</sub> | 6                         | <sup>2</sup> <sub>3</sub> | <sup>5</sup> <sub>4</sub> | <sup>3</sup> <sub>7</sub> |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>2</sup> <sub>8</sub> | <sup>2</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> |
| 9                         | 7                         | <sup>3</sup> <sub>5</sub> | 6                         | 4                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>5</sub> | <sup>1</sup> <sub>5</sub> | <sup>5</sup> <sub>8</sub> |
| 1                         | <sup>2</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> | <sup>4</sup> <sub>5</sub> | <sup>5</sup> <sub>6</sub> |
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| <sup>4</sup> <sub>3</sub> | 9                         | 6                         | <sup>4</sup> <sub>3</sub> | 5                         | 8                         | 1                         | 7                         | 2                         | <sup>6</sup> <sub>9</sub> |
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|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>5</sub> | 3                         | 6                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | 4                         | <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> |
| 8                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>5</sub> | 2                         | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>8</sub> | 7                         | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>9</sub> |
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| <sup>1</sup> <sub>2</sub> | <sup>1</sup> <sub>2</sub> | 9                         | <sup>1</sup> <sub>5</sub> | 6                         | <sup>1</sup> <sub>2</sub> | <sup>2</sup> <sub>3</sub> | 4                         | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>3</sub> |

|   |   |  |  |  |  |   |  |  |
|---|---|--|--|--|--|---|--|--|
| 8   | <sup>3</sup> <sub>5 6</sub> <sub>9</sub>              | <sup>2 3</sup> <sub>5</sub>                | <sup>1</sup> <sub>4</sub> <sub>9</sub>   | <sup>3</sup> <sub>7</sub>                | <sup>1 2 3</sup> <sub>5</sub> <sub>9</sub>   | <sup>3</sup> <sub>6</sub> <sub>9</sub>              | <sup>4 5</sup> <sub>9</sub>              | <sup>4 5 6</sup> <sub>9</sub>            |
| 1   | <sup>4 5</sup> <sub>7</sub> <sub>9</sub>              | <sup>3</sup> <sub>4 5</sub> <sub>9</sub>   | 6  | <sup>5</sup> <sub>9</sub>                | <sup>5</sup> <sub>9</sub>                    | <sup>3</sup> <sub>7</sub> <sub>9</sub>              | 8  | 2  |
| <sup>2 3</sup> <sub>5 6</sub> <sub>7</sub> <sub>9</sub> | <sup>3</sup> <sub>5 6</sub> <sub>7</sub> <sub>9</sub> | <sup>2 3</sup> <sub>5</sub>                | <sup>3</sup> <sub>4</sub> <sub>8 9</sub> | <sup>2</sup> <sub>5</sub> <sub>8 9</sub> | <sup>2 3</sup> <sub>5</sub> <sub>8 9</sub>   | <sup>3</sup> <sub>6</sub> <sub>7</sub> <sub>9</sub> | <sup>4 5</sup> <sub>7</sub> <sub>9</sub> | 1  |
| <sup>4 5</sup> <sub>9</sub>                             | <sup>3</sup> <sub>4 5</sub> <sub>8 9</sub>            | 6  | <sup>1</sup> <sub>8</sub> <sub>9</sub>   | <sup>1</sup> <sub>5</sub> <sub>8 9</sub> | <sup>1</sup> <sub>5</sub> <sub>8 9</sub>     | 2   | <sup>4</sup> <sub>7</sub> <sub>9</sub>   | <sup>4</sup> <sub>7</sub> <sub>8 9</sub> |
|   | <sup>3</sup> <sub>9</sub>                             | <sup>1</sup> <sub>8</sub> <sub>9</sub>     | 7  | 2  | 4  | 6   | 5  | <sup>9</sup> <sub>8</sub> <sub>9</sub>   |
| <sup>2</sup> <sub>4 5</sub> <sub>9</sub>                | <sup>1</sup> <sub>4 5</sub> <sub>8 9</sub>            | <sup>1 2</sup> <sub>4 5</sub> <sub>8</sub> | 7  | 3  | <sup>1</sup> <sub>5</sub> <sub>8 9</sub>     | <sup>1</sup> <sub>8</sub> <sub>9</sub>              | 6  | <sup>4</sup> <sub>8</sub> <sub>9</sub>   |
| <sup>3</sup> <sub>7</sub> <sub>9</sub>                  | <sup>1</sup> <sub>5</sub> <sub>7 8</sub>              | 9  | <sup>1</sup> <sub>8</sub>                | 6  | 4  | <sup>1</sup> <sub>7</sub> <sub>8</sub>              | 2  | <sup>5</sup> <sub>7</sub> <sub>8</sub>   |
|   | <sup>3</sup> <sub>7</sub> <sub>8</sub>                | <sup>1</sup> <sub>6</sub>                  | 5  | <sup>1 2</sup> <sub>8</sub> <sub>9</sub> | <sup>1 2 3</sup> <sub>7</sub> <sub>8 9</sub> | 4   | <sup>1</sup> <sub>7</sub> <sub>9</sub>   | <sup>6</sup> <sub>7</sub> <sub>8 9</sub> |
| <sup>4 5 6</sup> <sub>7</sub>                           | 2   | <sup>1</sup> <sub>4 5</sub> <sub>8</sub>   | <sup>1</sup> <sub>8</sub> <sub>9</sub>   | <sup>1</sup> <sub>8</sub> <sub>9</sub>   | <sup>1</sup> <sub>7</sub> <sub>8 9</sub>     | <sup>1</sup> <sub>7</sub> <sub>8 9</sub>            | <sup>1</sup> <sub>7</sub> <sub>9</sub>   | 3  |

|  |  |  |                             |  |  |   |   |   |
|--|--|--|-----------------------------|--|--|---|---|---|
| 4  | <sup>2</sup> <sub>7</sub> <sub>9</sub> | <sup>6</sup> <sub>7</sub> <sub>9</sub>   | <sup>1</sup> <sub>6</sub>   | 8                                      | <sup>7</sup> <sub>9</sub>              | 5   | 3   | <sup>1 2</sup> <sub>7</sub>                         |
| 8  | 1                                      | 3  | 5                           | <sup>4</sup> <sub>7</sub>              | 2                                      | 6   | <sup>4</sup> <sub>7</sub>                             | 9   |
| <sup>2</sup> <sub>5 6</sub> <sub>7</sub> | <sup>2</sup> <sub>6</sub> <sub>7</sub> | <sup>5 6</sup> <sub>7</sub> <sub>9</sub> | <sup>1</sup> <sub>6</sub>   | 3                                      | <sup>4</sup> <sub>7</sub> <sub>9</sub> | <sup>1</sup> <sub>4</sub> <sub>7</sub> <sub>8</sub> | <sup>1 2</sup> <sub>4</sub> <sub>7</sub> <sub>8</sub> | <sup>1 2</sup> <sub>7</sub>                         |
| 3  | 5                                      | <sup>4</sup> <sub>7</sub>                | 6                           | 9                                      | <sup>2</sup> <sub>4</sub> <sub>7</sub> | <sup>1</sup> <sub>6</sub>                           | <sup>1</sup> <sub>7</sub> <sub>8</sub>                | <sup>1 2</sup> <sub>7</sub> <sub>8</sub>            |
| <sup>2</sup> <sub>7</sub>                | <sup>6</sup> <sub>8</sub>              | <sup>6</sup> <sub>7</sub>                | 3                           | 5                                      | <sup>1</sup> <sub>6</sub>              | <sup>1</sup> <sub>7</sub> <sub>9</sub>              | <sup>1 2</sup> <sub>7</sub> <sub>9</sub>              | 4   |
| 9  | <sup>2</sup> <sub>4</sub> <sub>7</sub> | 1  | 8                           | <sup>2</sup> <sub>4</sub> <sub>7</sub> | <sup>4</sup> <sub>7</sub>              | 3   | 6   | 5   |
| <sup>5 6</sup> <sub>7</sub>              | <sup>4</sup> <sub>7</sub>              | <sup>3</sup> <sub>6</sub>                | 2                           | <sup>4</sup> <sub>7</sub>              | 1                                      | 8   | <sup>4</sup> <sub>7</sub> <sub>9</sub>                | <sup>4 5</sup> <sub>7</sub> <sub>9</sub>            |
| <sup>1</sup> <sub>7</sub>                | <sup>6</sup> <sub>4</sub> <sub>7</sub> | <sup>3</sup> <sub>6</sub>                | 8                           | <sup>4</sup> <sub>7</sub>              | 9                                      | 5   | 2   | <sup>1</sup> <sub>4</sub> <sub>7</sub>              |
| <sup>1</sup> <sub>7</sub>                | 5                                      | 9  | <sup>4 5</sup> <sub>7</sub> | 2                                      | 6                                      | 3   | <sup>1</sup> <sub>4</sub> <sub>7</sub>                | <sup>1</sup> <sub>4</sub> <sub>5</sub> <sub>7</sub> |

|                           |                       |                     |                     |                     |                     |                       |                     |                       |
|---------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|-----------------------|---------------------|-----------------------|
| 3                         | <sup>1 2</sup><br>9   | <sup>2</sup><br>9   | <sup>1 5</sup><br>7 | 4                   | <sup>1</sup><br>7 8 | <sup>5</sup><br>7 8 9 | 6                   | <sup>2</sup><br>7 8 9 |
| <sup>4</sup><br>7         | <sup>6</sup><br>4     | <sup>6</sup><br>4   | 5                   | 9                   | 2                   | <sup>3</sup><br>7 8   | <sup>4</sup><br>7 8 | <sup>3</sup><br>7 8   |
| <sup>1</sup><br>4         | 8                     | <sup>2</sup><br>4   | <sup>9</sup><br>6   | <sup>1 5</sup><br>7 | <sup>1 3</sup><br>7 | <sup>3</sup><br>7 9   | <sup>2 3</sup><br>5 | <sup>2 3</sup><br>4   |
| <sup>7</sup><br>7         |                       |                     |                     |                     |                     |                       |                     |                       |
| 9                         | 7                     | <sup>2 3</sup><br>8 | <sup>1 2</sup><br>1 | <sup>6</sup><br>8   | <sup>1</sup><br>6   | <sup>1 3</sup><br>8   | 4                   | 5                     |
| <sup>1</sup><br>4         | <sup>5</sup><br>4     | <sup>3</sup><br>5   | <sup>3</sup><br>4   | <sup>1</sup><br>7   | <sup>5</sup><br>7   | <sup>6</sup><br>8     | <sup>9</sup><br>2   | <sup>3</sup><br>6     |
| <sup>1</sup><br>5         | <sup>2</sup><br>5     |                     | <sup>1 2</sup><br>5 | <sup>3</sup><br>7   | <sup>4</sup><br>3   | <sup>1</sup><br>7 8   | <sup>9</sup><br>2   | <sup>3</sup><br>7 8   |
| <sup>8</sup><br>8         |                       |                     |                     |                     |                     |                       |                     |                       |
| 2                         | <sup>3</sup><br>5 6   | <sup>3</sup><br>8 9 | 4                   | <sup>1</sup><br>7   | <sup>1</sup><br>6   | <sup>3</sup><br>7 8 9 | <sup>5</sup><br>7 8 | <sup>3</sup><br>7 8 9 |
| <sup>4</sup><br>8         | <sup>6</sup><br>4     | <sup>6</sup><br>4   | 1                   | <sup>3</sup><br>7   | <sup>5</sup><br>6   | <sup>4</sup><br>7 8 9 | <sup>2</sup><br>7 8 | <sup>6</sup><br>7 8 9 |
| <sup>4 5 6</sup><br>4 5 6 | <sup>3</sup><br>4 5 6 | 7                   | 8                   | 9                   | 2                   | <sup>1</sup><br>4 5 6 | <sup>3</sup><br>5   | <sup>3</sup><br>4 6   |

|   |  |   |  |  |   |  |  |   |
|---|--|---|--|--|---|--|--|---|
| 1   | 6  | <sup>2 3</sup> <sub>4 5</sub>                       | <sup>2 3</sup> <sub>5</sub>                                      | <sup>2</sup> <sub>5</sub>  | 8   | 9                                      | <sup>2 3</sup> <sub>7</sub>              | <sup>2 3</sup> <sub>4</sub> <sub>7</sub>              |
| <sup>2 3</sup> <sub>5</sub> <sub>8 9</sub>          | <sup>2</sup> <sub>9</sub>                | <sup>2 3</sup> <sub>5</sub>                         | 7  | <sup>2</sup> <sub>5</sub> <sub>9</sub>                           | 4   | 6                                      | <sup>2 3</sup> <sub>8</sub>              | 1   |
| <sup>2 3</sup> <sub>4</sub> <sub>8 9</sub>          | 7  | <sup>2 3</sup> <sub>4</sub>                         | <sup>1 2 3</sup> <sub>6</sub> <sub>9</sub>                       | <sup>1 2</sup> <sub>6</sub> <sub>9</sub>                         | <sup>1</sup> <sub>3</sub> <sub>6</sub> <sub>9</sub> | 5                                      | <sup>2 3</sup> <sub>8</sub>              | <sup>2 3</sup> <sub>4</sub> <sub>8</sub>              |
| <sup>2</sup> <sub>5</sub> <sub>6</sub>              | 8  | 7   | <sup>1</sup> <sub>4</sub> <sub>5</sub> <sub>6</sub> <sub>9</sub> | <sup>1</sup> <sub>4</sub> <sub>5</sub> <sub>6</sub> <sub>9</sub> | <sup>1</sup> <sub>5</sub> <sub>6</sub> <sub>9</sub> | 3                                      | <sup>1 2</sup> <sub>6</sub> <sub>9</sub> | <sup>2</sup> <sub>9</sub>                             |
| <sup>3</sup> <sub>5</sub> <sub>6</sub> <sub>4</sub> | <sup>1</sup> <sub>5</sub> <sub>6</sub>   | <sup>1</sup> <sub>3</sub> <sub>5</sub> <sub>6</sub> | <sup>1</sup> <sub>5</sub> <sub>6</sub>                           | <sup>5 6</sup> <sub>7</sub> <sub>8 9</sub>                       | <sup>5 6</sup> <sub>7</sub> <sub>8 9</sub>          | 2                                      | <sup>1</sup> <sub>4</sub> <sub>7</sub>   | <sup>1</sup> <sub>6</sub> <sub>7</sub> <sub>8 9</sub> |
| <sup>2 3</sup> <sub>6</sub> <sub>4</sub>            | <sup>1 2</sup> <sub>6</sub> <sub>4</sub> | 9   | <sup>1</sup> <sub>8</sub>  | <sup>1</sup> <sub>3</sub> <sub>6</sub> <sub>7</sub>              | <sup>1</sup> <sub>3</sub> <sub>6</sub> <sub>7</sub> | <sup>1</sup> <sub>4</sub> <sub>7</sub> | 5  | <sup>2</sup> <sub>7</sub> <sub>8</sub>                |
| <sup>2</sup> <sub>4</sub> <sub>6</sub>              | 5  | <sup>2</sup> <sub>4</sub> <sub>6</sub>              | <sup>2</sup> <sub>4</sub> <sub>6</sub>                           | <sup>2</sup> <sub>1</sub>  | <sup>1</sup> <sub>7</sub>                           | <sup>1</sup> <sub>3</sub> <sub>7</sub> | <sup>3</sup> <sub>7</sub> <sub>9</sub>   | <sup>3</sup> <sub>7</sub> <sub>9</sub>                |
| 7   | <sup>1</sup> <sub>9</sub>                | 8   | <sup>1</sup> <sub>6</sub> <sub>9</sub>                           | 3  | <sup>1</sup> <sub>6</sub> <sub>9</sub>              | 2                                      | 4  | 5   |
| <sup>2</sup> <sub>4</sub> <sub>9</sub>              | 3  | <sup>1 2</sup> <sub>4</sub>                         | <sup>1 2</sup> <sub>4</sub> <sub>5</sub>                         | <sup>1 2</sup> <sub>4</sub> <sub>5</sub>                         | <sup>1</sup> <sub>5</sub> <sub>9</sub>              | 8                                      | <sup>1</sup> <sub>7</sub> <sub>9</sub>   | 6   |

|   |   |   |  |   |  |  |   |  |
|---|---|---|--|---|--|--|---|--|
| <sup>1</sup> <sub>7</sub> <sub>8</sub>              | 6   | <sup>1</sup> <sub>7</sub> <sub>9</sub>              | <sup>3</sup> <sub>7</sub> <sub>8</sub>                           | <sup>2 3</sup> <sub>5</sub>                         | 9                                      | <sup>2 3</sup> <sub>6</sub> <sub>9</sub> | 4   | <sup>2</sup> <sub>5</sub> <sub>8</sub>                           |
| <sup>5</sup> <sub>7</sub> <sub>8 9</sub>            | <sup>3</sup> <sub>7</sub> <sub>8</sub>              | 4   | <sup>2 3</sup> <sub>6</sub> <sub>7</sub> <sub>8</sub>            | <sup>3</sup> <sub>5</sub> <sub>6</sub> <sub>7</sub> | <sup>2 3</sup> <sub>7</sub>            | <sup>2 3</sup> <sub>6</sub> <sub>9</sub> | 1   | <sup>2</sup> <sub>5</sub> <sub>6</sub> <sub>8 9</sub>            |
| 2   | <sup>3</sup> <sub>8</sub>                           | <sup>3</sup> <sub>5</sub> <sub>9</sub>              | <sup>3</sup> <sub>4</sub> <sub>8</sub>                           | <sup>3</sup> <sub>4</sub> <sub>5</sub> <sub>6</sub> | 1                                      | <sup>3</sup> <sub>6</sub> <sub>9</sub>   | <sup>3</sup> <sub>5</sub> <sub>6</sub> <sub>8</sub> | 7  |
| <sup>1</sup> <sub>4</sub> <sub>7</sub> <sub>8</sub> | <sup>1</sup> <sub>4</sub> <sub>7</sub> <sub>8</sub> | 2   | <sup>4</sup> <sub>9</sub>  | <sup>3</sup> <sub>4</sub> <sub>9</sub>              | 6                                      | 5  | <sup>3</sup> <sub>7</sub>                           | <sup>1</sup> <sub>4</sub>  |
| 6   | 9   | <sup>3</sup> <sub>7</sub>                           | <sup>2 3</sup> <sub>4</sub> <sub>5</sub>                         | <sup>1</sup> <sub>4</sub>                           | <sup>2 3</sup> <sub>4</sub>            | <sup>2 3</sup> <sub>7</sub> <sub>8</sub> | <sup>2</sup> <sub>4</sub> <sub>8</sub>              | <sup>2</sup> <sub>8</sub> <sub>9</sub>                           |
| <sup>1</sup> <sub>4</sub> <sub>5</sub>              | <sup>1</sup> <sub>4</sub>                           | <sup>1</sup> <sub>5</sub>                           | <sup>2 3</sup> <sub>4</sub> <sub>5</sub>                         | <sup>2 3</sup> <sub>4</sub> <sub>5</sub>            | 7                                      | 8  | <sup>1 2 3</sup> <sub>4</sub> <sub>6</sub>          | <sup>1 2</sup> <sub>4</sub> <sub>6</sub>                         |
| 3   | 2   | 8   | <sup>4</sup> <sub>7</sub>  | <sup>6</sup> <sub>9</sub>                           | <sup>4</sup> <sub>6</sub> <sub>9</sub> | 5  | <sup>1</sup> <sub>4</sub> <sub>7</sub>              | <sup>1</sup> <sub>6</sub> <sub>4</sub> <sub>6</sub> <sub>9</sub> |
| <sup>4</sup> <sub>7</sub> <sub>9</sub>              | 5   | <sup>6</sup> <sub>7</sub> <sub>9</sub>              | 1  | 8   | <sup>4</sup> <sub>7</sub>              | <sup>2</sup> <sub>4</sub> <sub>7</sub>   | <sup>2</sup> <sub>6</sub> <sub>7</sub>              | 3  |
| <sup>1</sup> <sub>4</sub> <sub>7</sub>              | <sup>1</sup> <sub>4</sub> <sub>7</sub>              | <sup>1</sup> <sub>6</sub> <sub>7</sub> <sub>9</sub> | <sup>3</sup> <sub>4</sub> <sub>6</sub> <sub>7</sub> <sub>9</sub> | 2   | <sup>4</sup> <sub>7</sub>              | <sup>5 6</sup> <sub>7</sub> <sub>9</sub> | <sup>4 5 6</sup> <sub>7</sub> <sub>9</sub>          | <sup>9</sup> <sub>7</sub> <sub>9</sub>                           |

|  |  |                             |   |  |  |   |   |   |
|--|--|-----------------------------|---|--|--|---|---|---|
| 7                                      | 4                                      | <sup>3</sup> <sub>9</sub>   | 6   | <sup>3</sup> <sub>9</sub>                  | 8  | 1   | 5   | 2   |
| 6                                      | <sup>2</sup> <sub>5</sub> <sub>8</sub> | <sup>2 3</sup> <sub>5</sub> | <sup>1 2 3</sup> <sub>7</sub>                         | <sup>4</sup> <sub>7</sub>                  | <sup>1 2 3</sup> <sub>4</sub> <sub>7</sub> | 9   | <sup>3</sup> <sub>8</sub>                           | <sup>7<sub>8</sub></sup>                            |
| 1                                      | <sup>2</sup> <sub>8</sub>              | <sup>2 3</sup> <sub>9</sub> | <sup>2 3</sup> <sub>7</sub>                           | <sup>2 3</sup> <sub>7</sub> <sub>9</sub>   | 5  | <sup>4</sup> <sub>7</sub> <sub>8</sub>              | <sup>6</sup> <sub>8</sub>                           | <sup>3</sup> <sub>4</sub> <sub>7</sub> <sub>8</sub> |
| <sup>5</sup> <sub>8</sub>              | 9                                      | <sup>2</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>4</sub> <sub>5</sub> <sub>7</sub> | <sup>1 2</sup> <sub>5</sub> <sub>7</sub>   | <sup>1 2</sup> <sub>4</sub> <sub>7</sub>   | 3   | <sup>1 2</sup> <sub>4</sub> <sub>8</sub>            | 6   |
| <sup>3</sup> <sub>5</sub> <sub>8</sub> | 7                                      | 1                           | <sup>2 3</sup> <sub>4</sub> <sub>5</sub>              | <sup>6</sup> <sub>4</sub> <sub>9</sub>     | <sup>2 3</sup> <sub>4</sub> <sub>8</sub>   | <sup>2</sup> <sub>4</sub> <sub>8</sub>              | <sup>4</sup> <sub>8</sub> <sub>9</sub>              | <sup>4</sup> <sub>8</sub> <sub>9</sub>              |
| 4                                      | <sup>2 3</sup> <sub>6</sub>            | 8                           | <sup>1 2 3</sup> <sub>4</sub> <sub>6</sub>            | <sup>1 2 3</sup> <sub>4</sub> <sub>6</sub> | <sup>1 2 3</sup> <sub>9</sub>              | 5   | 7   | <sup>1</sup> <sub>9</sub>                           |
| <sup>3</sup> <sub>5</sub>              | <sup>1</sup> <sub>5</sub> <sub>6</sub> | 8                           | 9   | <sup>1 2 3</sup> <sub>7</sub>              | <sup>1 2 3</sup> <sub>4</sub> <sub>7</sub> | <sup>1</sup> <sub>4</sub> <sub>6</sub> <sub>7</sub> | <sup>1</sup> <sub>4</sub> <sub>6</sub> <sub>7</sub> | <sup>1</sup> <sub>4</sub> <sub>5</sub> <sub>7</sub> |
| 9                                      | <sup>1</sup> <sub>4</sub> <sub>5</sub> | 7                           | <sup>1</sup> <sub>4</sub> <sub>5</sub>                | <sup>1</sup> <sub>5</sub> <sub>8</sub>     | 6  | 2   | <sup>1</sup> <sub>4</sub> <sub>8</sub>              | <sup>1</sup> <sub>4</sub> <sub>5</sub> <sub>8</sub> |
| 2                                      | <sup>1</sup> <sub>5</sub> <sub>6</sub> | 4                           | <sup>1</sup> <sub>5</sub> <sub>7</sub>                | <sup>1</sup> <sub>5</sub> <sub>7</sub>     | <sup>1</sup> <sub>7</sub>                  | <sup>6</sup> <sub>7</sub> <sub>8</sub>              | 9   | 3   |

|            |                |              |          |          |              |              |            |              |
|------------|----------------|--------------|----------|----------|--------------|--------------|------------|--------------|
| 1<br>7 5 9 | 3              | 1<br>6 9 7   | 5<br>7   | 6<br>7   | 1<br>7 5 6 9 | 8            | 2          | 4            |
| 2          | 7 8 9          | 1<br>6 8 9   | 3<br>8   | 4        | 1<br>7 6 9   | 5            | 1<br>7     | 3<br>1 3 9   |
| 1<br>4 5 7 | 4 5 6<br>7 8 9 | 1<br>6 8 9   | 3<br>8   | 2        | 1<br>5 6 7   | 6<br>7 9     | 1<br>3 6 7 | 1<br>3 9     |
| 3<br>7 8   | 1              | 5            | 4<br>7 2 | 9        | 2<br>7       | 2 3<br>6 4 8 | 3<br>6     | 2 3<br>8     |
| 6          | 7 9            | 3<br>9 7     | 4<br>2   | 1        | 8            | 2 3<br>9     | 4 5<br>3   | 2 3<br>5 9   |
| 8 9        | 2              | 4            | 6        | 5        | 3            | 1<br>9       | 1<br>8     | 7            |
| 1<br>5     | 5 6<br>8       | 1 2 3<br>6 8 | 2<br>5 7 | 6<br>7 8 | 2<br>5 6 7   | 4            | 9          | 1 2 3<br>5 8 |
| 4 5<br>9   | 4 5 6<br>8 9   | 2 3<br>6 8 9 | 1        | 6<br>8   | 4 5 6        | 2 3<br>7     | 5<br>7 8   | 3<br>5 8     |
| 1<br>4 5   | 4 5<br>8       | 7            | 9        | 3        | 4 5<br>2     | 1 2<br>1     | 5<br>8     | 6            |

|  |  |  |  |                               |                                 |                                 |  |                             |                           |
|--|--|--|--|-------------------------------|---------------------------------|---------------------------------|--|-----------------------------|---------------------------|
| <div>6</div> <div>8 9</div>              | 2  | <div>4 5 6</div> <div>8 9</div>            | <div>3</div> <div>4 5 9</div>            | <div>3</div> <div>1 3 9</div> | <div>1</div> <div>4 5</div>     | <div>3</div> <div>4 5 8</div>   | <div>3</div> <div>4 5 8</div>            | <div>5</div> <div>7 8</div> |                           |
| 7  | <div>4 5</div> <div>8</div>              | <div>3</div> <div>4 5 8 9</div>            | <div>3</div> <div>4 5 8 9</div>          | <div>6</div> <div>2 3 9</div> | <div>2 3</div> <div>4 5</div>   | <div>2 3</div> <div>4 8</div>   | <div>2 3</div> <div>4 5 8</div>          | 1                           | <div>5</div> <div>8</div> |
| 1  | <div>4 5</div> <div>3</div>              | <div>4 5</div> <div>3</div>                | <div>2 3</div> <div>4 5</div>            | 8                             | 7                               | 6                               | <div>4 5</div> <div>2 3</div>            | 9                           |                           |
| <div>2</div> <div>6</div> <div>8</div>   | 9  | <div>2 3</div> <div>8</div>                | <div>2 3</div> <div>5 8</div>            | <div>2 3</div> <div>6</div>   | <div>2 3</div> <div>5 6 8</div> | 1                               | 7  | 4                           |                           |
| <div>6</div> <div>8</div>                | 7  | 1  | <div>4</div> <div>3</div> <div>8 9</div> | <div>3</div> <div>6 9</div>   | <div>3</div> <div>4 8</div>     | 5                               | <div>3</div> <div>8 6</div>              | 2                           |                           |
| 5  | <div>4</div> <div>8</div>                | <div>3</div> <div>6 4</div>                | <div>2 3</div> <div>8 6</div>            | 1                             | 7                               | <div>2 3</div> <div>8 6</div>   | <div>3</div> <div>8</div>                | 9                           | <div>6</div> <div>8</div> |
| <div>2</div> <div>6</div> <div>8 9</div> | <div>1</div> <div>6</div> <div>8</div>   | <div>2</div> <div>6</div> <div>8 9</div>   | <div>2 3</div> <div>8</div>              | 5                             | <div>1 2 3</div> <div>6 8</div> | <div>2</div> <div>4 7 8 9</div> | <div>2</div> <div>4 6 8</div>            | <div>1</div> <div>7 8</div> | <div>6</div>              |
| 3  | <div>1</div> <div>5 6</div>              | 7  | <div>2</div> <div>8</div>                | 4                             | 9                               | <div>2</div> <div>8</div>       | <div>5 6</div> <div>1</div>              | <div>5 6</div>              |                           |
| 4  | <div>1</div> <div>5 6</div> <div>8</div> | <div>2</div> <div>5 6</div> <div>8 9</div> | 7  | <div>1 2</div> <div>6</div>   | <div>1 2</div> <div>6 8</div>   | <div>2</div> <div>8 9</div>     | <div>2</div> <div>5 6</div> <div>8</div> | 3                           |                           |

|            |              |            |            |          |            |               |            |              |
|------------|--------------|------------|------------|----------|------------|---------------|------------|--------------|
| 5 6<br>7   | 5<br>9       | 3          | 7 5<br>9 7 | 6<br>9   | 8          | 1 2<br>1 2    | 4          | 1 2          |
| 1<br>4 8   | 1<br>6 4     | 6<br>8 9   | 2          | 1<br>6 9 | 3<br>9     | 3<br>8        | 7          | 5            |
| 1 2<br>5 8 | 1 2<br>5 7 8 | 5<br>7 8   | 4          | 1<br>7   | 5<br>7     | 3<br>9        | 6          | 3<br>8       |
| 2 3<br>5 8 | 2 3<br>5 8   | 5 6<br>8 9 | 3<br>8 9   | 4        | 1<br>6 9   | 1 2<br>8 6    | 1 2<br>8 9 | 7            |
| 4<br>8 6   | 4<br>7 8     | 2<br>1     | 7 8 9      | 5        | 6<br>7 9   | 4<br>8 6      | 3          | 2<br>6 8 9   |
| 9          | 4<br>7 8     | 3<br>7 8   | 6<br>7 8   | 2        | 1<br>7     | 1<br>4 8      | 5          | 1<br>8 6     |
| 1<br>5 8   | 1<br>5 8 9   | 4          | 6          | 7 8 9    | 2<br>5 7 9 | 1 2 3<br>7 8  | 1 2<br>8 9 | 1 2 3<br>8 9 |
| 5<br>8     | 3<br>6       | 5<br>8 9   | 1          | 7 8 9    | 2<br>5 7 9 | 2 3<br>7 8    | 2<br>8 9   | 4            |
| 7          | 1<br>5 8 9   | 2          | 5<br>9     | 3        | 4          | 1<br>5 6<br>8 | 1<br>8 9   | 6<br>8 9     |

|            |                 |          |                |              |              |        |                |            |
|------------|-----------------|----------|----------------|--------------|--------------|--------|----------------|------------|
| 2<br>5 8 9 | 2<br>5 7 8 9    | 5<br>7   | 1 2<br>5 9     | 6            | 1 2<br>5 8 9 | 3      | 1 2<br>8       | 4          |
| 2<br>5 8   | 4               | 6        | 1 2<br>5       | 3            | 7            | 9      | 1 2<br>8       | 1 2<br>8   |
| 1          | 2<br>8 9        | 3        | 4              | 2<br>8       | 2<br>8 9     | 5      | 6              | 7          |
| 7          | 1 2 3<br>9      | 1<br>4   | 1 2 3<br>6 4 9 | 1 2<br>4     | 1 2<br>6 9   | 8      | 1 2 3<br>4     | 5          |
| 2 3<br>5 9 | 1 2 3<br>5 9    | 1<br>4 5 | 8              | 1 2<br>4 5 7 | 1 2<br>4 5 9 | 4<br>7 | 1 2 3<br>6 4 7 | 1 2 3<br>6 |
| 6          | 1 2 3<br>5      | 8        | 1 2 3<br>5     | 1 2<br>4 5 7 | 1 2<br>4 5   | 4<br>7 | 9              | 1 2 3      |
| 5<br>8     | 3<br>5 6<br>7 8 | 2        | 1<br>5 6       | 9            | 1<br>4 5 6 8 | 4<br>7 | 6<br>4 5 7 8   | 3<br>8     |
| 4          | 1<br>5 6<br>7 8 | 1<br>5 7 | 1<br>5 6       | 5<br>8       | 3            | 2      | 5<br>7 8       | 9          |
| 5<br>8     | 3<br>5 6<br>8   | 9        | 7              | 4 5<br>2 8   | 2<br>4 5 6 8 | 1      | 4 5<br>3 8     | 3<br>6     |

|        |        |        |              |                |                  |              |          |          |
|--------|--------|--------|--------------|----------------|------------------|--------------|----------|----------|
| 2<br>8 | 3<br>7 | 6      | 1 3<br>5 8   | 1 3<br>7       | 9                | 4            | 2<br>7 5 | 1<br>7 5 |
| 4<br>8 | 1      | 5      | 4 6<br>8     | 4 6<br>7 8     | 4 6<br>8 9       | 3            | 7<br>6 9 | 6<br>9   |
| 4<br>8 | 3<br>7 | 9      | 2            | 1 3<br>4 7     | 1 3<br>4 5 6 7 8 | 5            | 5<br>7   | 5 6<br>7 |
| 3<br>9 | 4      | 2<br>7 | 6<br>8       | 5              | 6                | 1 2 3<br>7 9 | 2<br>1 3 | 3        |
| 5<br>9 | 8      | 2<br>7 | 1 3<br>9 7   | 1 2 3<br>9 7   | 1 3<br>9 7       | 6            | 4        | 5<br>7   |
| 5<br>9 | 6      | 1      | 4<br>9 7     | 3 2 3<br>4 9 7 | 3<br>4 7 9       | 2 3<br>5 7   | 2<br>5   | 8        |
| 7      | 5<br>9 | 8      | 1 3<br>4 5 9 | 1 3<br>4 5 9   | 1 3<br>4 5       | 5<br>3       | 6        | 2        |
| 6      | 2      | 4      | 7            | 8              | 5<br>3           | 5<br>9       | 1        | 5<br>9   |
| 1      | 5<br>9 | 3      | 5<br>9       | 6              | 2                | 7            | 8        | 4        |

|              |            |              |              |            |            |              |            |            |            |
|--------------|------------|--------------|--------------|------------|------------|--------------|------------|------------|------------|
| 1<br>4 8     | 3<br>4 8   | 1 3<br>6 4 8 | 1 3<br>6     | 3<br>6 8 9 | 7          | 4<br>3 6 9   | 1 3<br>6 9 | 5          | 2          |
| 4 5<br>8     | 3<br>2     | 7            | 5 6<br>9     | 5<br>9     | 1          | 8            | 3<br>4 6 9 | 4<br>9     | 6<br>9     |
| 1 3<br>4 5 8 | 9          | 1<br>4 8     | 2 3<br>5 6 8 | 3<br>5 8   | 2 3<br>4 6 | 1 3<br>4 6   | 7          | 1<br>4 6   | 6          |
| 1<br>8 9     | 1<br>5 6 8 | 2            | 5 6<br>9     | 3          | 4          | 7            | 1 3<br>5 9 | 1 3<br>8 9 | 1<br>5 8 9 |
| 1<br>4 9     | 1<br>4 5   | 3            | 5<br>9       | 2          | 8          | 1 3<br>4 5 9 | 6          | 7          | 5<br>8 9   |
| 7            | 4 5 6<br>8 | 4<br>8 9     | 1            | 5<br>9     | 3<br>6 9   | 2            | 3<br>8 9   | 4 5<br>8 9 | 9          |
| 6            | 1<br>8     | 1<br>8 9     | 4            | 1<br>8 9   | 5          | 7            | 2          | 3          | 3          |
| 2            | 1 3<br>8   | 5            | 7            | 6          | 3<br>9     | 1<br>9       | 4          | 1<br>8 9   | 9          |
| 1<br>4 8 9   | 3<br>7     | 1<br>4 8 9   | 2 3<br>8 9   | 1 3<br>8 9 | 2 3<br>9   | 5 6<br>8 9   | 1<br>8 9   | 5 6        | 5 6        |

|                               |                             |                                 |                               |                                 |                                 |                               |                               |                                 |
|-------------------------------|-----------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|
| 3                             | 5                           | <sup>7 8 9</sup>                | 1                             | <sup>2</sup> <sub>7</sub>       | <sup>2</sup> <sub>9 7 8</sub>   | 6                             | <sup>4</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>8 9</sub>     |
| <sup>1</sup> <sub>7 8</sub>   | 4                           | <sup>1</sup> <sub>7 8 9</sub>   | <sup>5</sup> <sub>7 8 9</sub> | 6                               | <sup>3</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>5 8 9</sub> | 2                             | <sup>1</sup> <sub>5 8 9</sub>   |
| <sup>1 2</sup> <sub>7 8</sub> | <sup>2</sup> <sub>7 8</sub> | <sup>1</sup> <sub>6 7 8 9</sub> | 4                             | <sup>5</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>5 8 9</sub> | <sup>5</sup> <sub>7 8 9</sub> | 3                               |
| <sup>1</sup> <sub>4 7 8</sub> | <sup>3</sup> <sub>7 8</sub> | 2                               | <sup>5</sup> <sub>7 9</sub>   | <sup>4 5</sup> <sub>7 9 7</sub> | <sup>3</sup> <sub>4 6</sub>     | <sup>5</sup> <sub>8 9</sub>   | <sup>4 5</sup> <sub>8 9</sub> | <sup>4 5 6</sup> <sub>8 9</sub> |
| 9                             | <sup>3</sup> <sub>8</sub>   | <sup>1</sup> <sub>6 4 8</sub>   | <sup>3</sup> <sub>5</sub>     | <sup>4 5</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>4 6</sub>     | 7                             | <sup>4 5</sup> <sub>8</sub>   | 2                               |
| 5                             | <sup>3</sup> <sub>7</sub>   | <sup>4</sup> <sub>6 7</sub>     | <sup>2 3</sup> <sub>7 9</sub> | 8                               | <sup>2 3</sup> <sub>4 7</sub>   | <sup>3</sup> <sub>9</sub>     | 1                             | <sup>4</sup> <sub>6 9</sub>     |
| <sup>2</sup> <sub>4 7 8</sub> | 9                           | <sup>4</sup> <sub>7 8</sub>     | 6                             | <sup>2 3</sup> <sub>4 7</sub>   | <sup>2 3</sup> <sub>4 7 8</sub> | <sup>1 2</sup> <sub>5 8</sub> | <sup>1</sup> <sub>5 8</sub>   | <sup>1</sup> <sub>5 8</sub>     |
| <sup>2</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>8</sub> | 5                               | <sup>2 3</sup> <sub>8</sub>   | 1                               | 9                               | 4                             | 6                             | 7                               |
| 6                             | 1                           | <sup>4</sup> <sub>7 8</sub>     | <sup>2</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>7</sub>       | 5                               | <sup>2</sup> <sub>8 9</sub>   | 3                             | <sup>8</sup> <sub>9</sub>       |

|             |             |                  |                       |                       |             |                  |             |                  |             |        |
|-------------|-------------|------------------|-----------------------|-----------------------|-------------|------------------|-------------|------------------|-------------|--------|
| 1<br>7      | 3<br>5      | 2 3<br>5         | 4                     | 1<br>5                | 3<br>8      | 1 2<br>5         | 1<br>9      | 3<br>7           | 1<br>9      | 3<br>6 |
| 9           | 2 3<br>5    | 1 2 3            | 7                     | 6                     | 1 2<br>5    | 8                | 1<br>9      | 3<br>7           | 4           |        |
| 1<br>7      | 3<br>8      | 6                | 1<br>9                | 3<br>9                | 4           | 1<br>7           | 3<br>9      | 5                | 2           |        |
| 1<br>4      | 5<br>6      | 4<br>5<br>6      | 9                     | 1<br>4                | 5<br>2      | 3                | 1<br>5<br>6 | 7                | 8           |        |
| 1<br>4      | 3<br>5<br>6 | 3<br>4<br>5<br>6 | 1<br>7                | 3<br>8                | 1<br>4<br>5 | 2                | 1<br>7      | 3<br>5<br>9      | 5<br>6<br>9 |        |
| 2           | 5<br>7      | 3<br>8           | 1<br>9                | 5<br>7                | 3<br>9      | 6                | 1<br>5<br>9 | 3<br>4           | 1<br>5<br>9 |        |
| 3<br>4<br>7 | 6<br>1      | 2 3<br>7         | 3<br>4<br>5<br>6<br>9 | 3<br>4<br>5<br>7<br>9 | 8           | 3<br>4<br>5<br>6 | 2<br>3<br>6 | 3<br>5<br>7      |             |        |
| 3<br>4<br>7 | 6<br>4<br>8 | 2 3<br>7         | 4<br>6                | 1<br>3<br>4<br>7      | 3<br>1<br>7 | 1<br>4           | 3<br>6      | 1<br>2<br>3<br>6 | 8<br>9      |        |
| 3<br>4<br>7 | 6<br>8      | 9                | 3<br>7                | 2<br>4<br>5           | 3<br>1<br>7 | 1<br>4<br>5<br>6 | 3<br>1<br>8 | 3<br>6<br>7      | 1<br>5<br>9 |        |

|                                 |                                   |                               |                                 |                                   |                                 |                               |                             |                             |
|---------------------------------|-----------------------------------|-------------------------------|---------------------------------|-----------------------------------|---------------------------------|-------------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>8 9</sub>     | <sup>3</sup> <sub>5 8 9</sub>     | <sup>1</sup> <sub>5 8</sub>   | 4                               | <sup>1</sup> <sub>3</sub>         | 6                               | 2                             | <sup>3</sup> <sub>8 9</sub> | 7                           |
| <sup>1</sup> <sub>4 7 8</sub>   | <sup>3</sup> <sub>4 7 8</sub>     | 2                             | <sup>5</sup> <sub>7 8</sub>     | 9                                 | <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>8</sub>     | <sup>3</sup> <sub>4 8</sub> | 6                           |
| <sup>3</sup> <sub>4 7 8 9</sub> | <sup>3</sup> <sub>4 6 7 8 9</sub> | <sup>3</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>7 8</sub>   | <sup>2 3</sup> <sub>7</sub>       | 1                               | 5                             | <sup>4</sup> <sub>8 9</sub> | <sup>3</sup> <sub>8 9</sub> |
| <sup>1</sup> <sub>4</sub>       | <sup>3</sup> <sub>4 6 4 6</sub>   | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>6 4 7</sub>   | <sup>3</sup> <sub>4 6</sub>       | 8                               | 9                             | 2                           | 5                           |
| 5                               | <sup>2</sup> <sub>4 8 9</sub>     | <sup>1</sup> <sub>6 4 8</sub> | <sup>2 3</sup> <sub>6 4 9</sub> | <sup>1 2 3</sup> <sub>4 6 4</sub> | <sup>1 2 3</sup> <sub>8</sub>   | <sup>3</sup> <sub>6 8</sub>   | <sup>1</sup> <sub>7 8</sub> | <sup>3</sup> <sub>8</sub>   |
| <sup>1 2 3</sup> <sub>8 9</sub> | <sup>2</sup> <sub>8 9</sub>       | 7                             | <sup>2 3</sup> <sub>6 9</sub>   | 5                                 | <sup>1 2 3</sup> <sub>4 8</sub> | 4                             | <sup>1</sup> <sub>6 8</sub> | <sup>3</sup> <sub>1 8</sub> |
| 6                               | 3                                 | <sup>4 5</sup> <sub>8</sub>   | 1                               | <sup>2</sup> <sub>4 7</sub>       | <sup>2</sup> <sub>4 5 7</sub>   | <sup>7 8</sup>                | <sup>4</sup> <sub>8 9</sub> | <sup>4</sup> <sub>8 9</sub> |
| <sup>2</sup> <sub>4 7</sub>     | <sup>2</sup> <sub>4 5 7</sub>     | <sup>4 5</sup>                | <sup>3</sup> <sub>5 6 7</sub>   | 8                                 | 9                               | <sup>3</sup> <sub>6 4 7</sub> | <sup>1</sup> <sub>6 4</sub> | <sup>3</sup> <sub>1 3</sub> |
| <sup>4</sup> <sub>7 8</sub>     | 1                                 | 9                             | <sup>3</sup> <sub>6 7</sub>     | <sup>3</sup> <sub>4 6 7</sub>     | <sup>3</sup> <sub>4 7</sub>     | 5                             | <sup>3</sup> <sub>4 8</sub> | 2                           |

|                                 |                                 |                               |                             |                               |                                 |                               |                                   |                                     |
|---------------------------------|---------------------------------|-------------------------------|-----------------------------|-------------------------------|---------------------------------|-------------------------------|-----------------------------------|-------------------------------------|
| <sup>1</sup> <sub>5 6</sub>     | <sup>3</sup> <sub>5 6 8</sub>   | <sup>1</sup> <sub>5</sub>     | 2                           | 7                             | 9                               | <sup>1</sup> <sub>4 8</sub>   | <sup>3</sup> <sub>4 5 6 8</sub>   | <sup>1</sup> <sub>4 8</sub>         |
| 9                               | <sup>2 3</sup> <sub>5 6 8</sub> | <sup>1 2 3</sup> <sub>5</sub> | <sup>4 5</sup> <sub>8</sub> | <sup>1</sup> <sub>4 5 8</sub> | <sup>1</sup> <sub>4 5 8</sub>   | <sup>1</sup> <sub>8</sub>     | <sup>1 2</sup> <sub>6 8</sub>     | <sup>6</sup> <sub>8</sub>           |
| <sup>1 2 3</sup> <sub>5</sub>   | 7                               | 4                             | 6                           | <sup>1</sup> <sub>5 8</sub>   | <sup>3</sup> <sub>5 8</sub>     | <sup>1</sup> <sub>8 9</sub>   | <sup>1 2</sup> <sub>8 9</sub>     | <sup>1 2</sup> <sub>8 9</sub>       |
| <sup>1 2</sup> <sub>7</sub>     | <sup>2</sup> <sub>9</sub>       | <sup>1 2</sup> <sub>9</sub>   | <sup>4</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>4</sub>   | 3                               | 5                             | <sup>6</sup> <sub>8</sub>         | <sup>6</sup> <sub>8</sub>           |
| <sup>1 2</sup> <sub>7</sub>     | <sup>5</sup> <sub>4 8</sub>     | 8                             | <sup>7</sup> <sub>5 9</sub> | 6                             | <sup>1 2</sup> <sub>7</sub>     | <sup>1</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>9</sub>         | 3                                   |
| <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>5 9</sub>     | 6                             | 8                           | <sup>1</sup> <sub>5 7</sub>   | <sup>1</sup> <sub>5 7</sub>     | 2                             | <sup>1</sup> <sub>4 9</sub>       | <sup>1</sup> <sub>4 9</sub>         |
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| 8                               | <sup>2 3</sup> <sub>6 9</sub>   | <sup>2 3</sup> <sub>9</sub>   | 1                           | <sup>2 3</sup> <sub>4 7</sub> | <sup>2</sup> <sub>4 6 7</sub>   | <sup>2</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>4 9</sub>       | 5                                   |
| <sup>2 3</sup> <sub>4 5 6</sub> | 1                               | 7                             | <sup>4 5</sup> <sub>8</sub> | 9                             | <sup>2</sup> <sub>4 5 6 8</sub> | <sup>2</sup> <sub>4 8</sub>   | <sup>2</sup> <sub>4 8</sub>       | <sup>2</sup> <sub>4 8</sub>         |

|                               |                             |                               |                               |                               |                               |                               |                               |                             |
|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|
| 4                             | 8                           | <sup>1</sup> <sub>7</sub>     | 3                             | <sup>1 2</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>5</sub>   | 9                             | <sup>2</sup> <sub>7</sub>     | <sup>6</sup> <sub>7 6</sub> |
| <sup>3</sup> <sub>6</sub>     | <sup>1 2 3</sup>            | 9                             | <sup>1 2</sup> <sub>5 8</sub> | 7                             | 4                             | <sup>2 3</sup> <sub>5 8</sub> | <sup>2 3</sup> <sub>8</sub>   | <sup>3</sup> <sub>6 8</sub> |
| <sup>3</sup> <sub>7</sub>     | <sup>2 3</sup> <sub>7</sub> | 5                             | <sup>2</sup> <sub>8 9</sub>   | 6                             | <sup>2</sup> <sub>8 9</sub>   | 4                             | 1                             | <sup>3</sup> <sub>7 8</sub> |
| 1                             | <sup>4</sup> <sub>7 9</sub> | <sup>4</sup> <sub>7 8</sub>   | <sup>5 6</sup> <sub>8 9</sub> | <sup>5</sup> <sub>9</sub>     | <sup>5 6</sup> <sub>8 9</sub> | <sup>5</sup> <sub>7 8</sub>   | <sup>5 6</sup> <sub>7 8</sub> | 2                           |
| <sup>2</sup> <sub>7 8 9</sub> | 5                           | <sup>7 8</sup>                | <sup>1 2</sup> <sub>8 9</sub> | <sup>1 2 3</sup> <sub>9</sub> | <sup>1 2</sup> <sub>9</sub>   | <sup>1</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7 8</sub>   | 4                           |
| <sup>2</sup> <sub>8</sub>     | 6                           | 3                             | <sup>1 2</sup> <sub>5 8</sub> | 4                             | 7                             | <sup>1</sup> <sub>5 8</sub>   | <sup>5</sup> <sub>8</sub>     | 9                           |
| <sup>5</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>4 7</sub> | <sup>1</sup> <sub>4 7 8</sub> | <sup>1 2</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>5 9</sub> | 3                             | 6                             | <sup>2</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>7 8</sub> |
| <sup>3</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>6 7</sub> | 2                             | <sup>1</sup> <sub>7 9</sub>   | 8                             | <sup>1</sup> <sub>6 9</sub>   | <sup>3</sup> <sub>7</sub>     | 4                             | 5                           |
| <sup>5 6</sup> <sub>7 8</sub> | <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>7 8</sub>   | 4                             | <sup>1 2</sup> <sub>5</sub>   | <sup>1 2</sup> <sub>5 6</sub> | <sup>2 3</sup> <sub>7 8</sub> | 9                             | <sup>1</sup> <sub>7 8</sub> |

|                             |                               |                             |                                 |                                 |                                 |                                 |                               |                                 |
|-----------------------------|-------------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|
| 1                           | <sup>2 3</sup> <sub>4</sub>   | <sup>2 3</sup> <sub>9</sub> | <sup>2 3</sup> <sub>5 8 9</sub> | 7                               | <sup>2 3</sup> <sub>5 8</sub>   | 6                               | <sup>4</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>8 9</sub>     |
| 8                           | <sup>4</sup> <sub>6</sub>     | 5                           | <sup>2</sup> <sub>9</sub>       | <sup>1</sup> <sub>6 9</sub>     | <sup>1 2</sup> <sub>4</sub>     | <sup>2</sup> <sub>9</sub>       | 7                             | 3                               |
| <sup>2 3</sup> <sub>9</sub> | <sup>2 3</sup> <sub>6</sub>   | 7                           | 4                               | <sup>3</sup> <sub>6 8 9</sub>   | <sup>2 3</sup> <sub>8</sub>     | <sup>2</sup> <sub>8 9</sub>     | 5                             | 1                               |
| <sup>2 3</sup> <sub>9</sub> | <sup>1 2 3</sup> <sub>8</sub> | 6                           | <sup>5</sup> <sub>7 8 9</sub>   | <sup>3</sup> <sub>4 5 8 9</sub> | <sup>5</sup> <sub>8</sub>       | <sup>3</sup> <sub>8 9</sub>     | 7                             | <sup>1</sup> <sub>4 8 9</sub>   |
| <sup>3</sup> <sub>9</sub>   | <sup>1</sup> <sub>8</sub>     | 4                           | <sup>5</sup> <sub>7 8 9</sub>   | <sup>3</sup> <sub>2</sub>       | <sup>5</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>5 8 9</sub>   | <sup>3</sup> <sub>8 9</sub>   | <sup>5 6</sup> <sub>8 9</sub>   |
| 5                           | 7                             | <sup>3</sup> <sub>8 9</sub> | 1                               | <sup>4</sup> <sub>8 9</sub>     | 6                               | <sup>4</sup> <sub>8 9</sub>     | 2                             | <sup>4</sup> <sub>8 9</sub>     |
| 4                           | <sup>2</sup> <sub>5 8</sub>   | <sup>1 2</sup> <sub>8</sub> | 6                               | <sup>1</sup> <sub>5 8</sub>     | 9                               | <sup>1</sup> <sub>8</sub>       | 7                             | <sup>2</sup> <sub>8</sub>       |
| 6                           | 9                             | <sup>1</sup> <sub>8</sub>   | <sup>2 3</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>5 8</sub>     | <sup>1 2 3</sup> <sub>7 8</sub> | <sup>1 2</sup> <sub>4 5 8</sub> | <sup>1</sup> <sub>4 8</sub>   | <sup>2</sup> <sub>4 5 8</sub>   |
| 7                           | <sup>5</sup> <sub>8</sub>     | <sup>3</sup> <sub>8</sub>   | <sup>1</sup> <sub>5 8</sub>     | <sup>3</sup> <sub>5 8</sub>     | 4                               | <sup>1 2</sup> <sub>5 8 9</sub> | <sup>1</sup> <sub>6 8 9</sub> | <sup>2</sup> <sub>5 6 8 9</sub> |

|                   |                     |                 |              |              |          |          |              |            |
|-------------------|---------------------|-----------------|--------------|--------------|----------|----------|--------------|------------|
| 2 3<br>5 9        | 2 3<br>5 8 9        | 2 3<br>5 8 9    | 7            | 1 2<br>5 6 9 | 1 2<br>5 | 4        | 1<br>8 6     | 1<br>8 9   |
| 2<br>4 5<br>7 9   | 2<br>4 5<br>7 9     | 6               | 1 2<br>4 9   | 8            | 1 2<br>5 | 1<br>9   | 3            | 1<br>7 9   |
| 4<br>7 9          | 1                   | 4<br>8 9        | 4<br>6 9     | 4<br>6 9     | 3        | 2        | 7 8 6        | 5          |
| 1                 | 2 3<br>4 5<br>7 8   | 2 3<br>4 5<br>8 | 2<br>4 8     | 2<br>4       | 6        | 5<br>8   | 9            | 4<br>7 8   |
| 2<br>4 9          | 2<br>4 8 9          | 2<br>4 8 9      | 5            | 1 2<br>4 9   | 7        | 3        | 1 2<br>4 8   | 6          |
| 2<br>4 5 6<br>7 9 | 2<br>4 5 6<br>7 8 9 | 2<br>4 5<br>8 9 | 1 2<br>4 8 9 | 3            | 1 2<br>8 | 1<br>5 8 | 1 2<br>4 7 8 | 1<br>4 7 8 |
| 8                 | 2 3<br>4 5 6<br>4 5 | 1 2 3<br>6      | 7            | 9            | 1<br>6 4 | 1<br>4   | 1 3<br>4     |            |
| 3<br>4 6<br>9     | 3<br>4 6<br>9       | 1 3<br>4        | 1<br>6       | 3<br>5 6     | 1<br>5 8 | 7        | 1<br>4 8     | 2          |
| 2 3<br>6          | 2 3<br>6            | 7               | 1 2 3<br>8   | 1 2<br>6     | 4        | 1<br>8 9 | 5            | 1 3<br>8 9 |

|                 |                |                  |        |              |              |              |              |            |
|-----------------|----------------|------------------|--------|--------------|--------------|--------------|--------------|------------|
| 1 2 3<br>9      | 1 2<br>5 9     | 1 5<br>3 9       | 6      | 4<br>9       | 3 4 5<br>3   | 7            | 1 2<br>4 9   | 8          |
| 1 2 3<br>6 9    | 1 2<br>5 7 8 9 | 1 3<br>5 6 7 8 9 | 4<br>9 | 3<br>7 8 9   | 3 4 5<br>7 8 | 1 2 3<br>4 9 | 1 2<br>4 6 9 | 2 3<br>4 9 |
| 3<br>6 9        | 4<br>7 8       | 2                | 7 8    | 1            | 5<br>9       | 6<br>9       | 5<br>9       | 3<br>9     |
| 1 2<br>4 6<br>9 | 1 2<br>7 9     | 1<br>4 6 7 9     | 4<br>9 | 1 2<br>4 8 9 | 2<br>8       | 4<br>9       | 5<br>7 9     | 3<br>9     |
| 5               | 1 2<br>9       | 1<br>4 9         | 7      | 1 2 3<br>4 9 | 2 3          | 8            | 4<br>9       | 6          |
| 8               | 3              | 4<br>7 9         | 4<br>9 | 5            | 6            | 4<br>9       | 2<br>4 9     | 1          |
| 7               | 1<br>8 9       | 1<br>4 8 9       | 5      | 1 2<br>4 6 4 | 2            | 1 2<br>4 6 9 | 3<br>4 9     | 2<br>9     |
| 1 3<br>4        | 3<br>5         | 1<br>4 5 3       | 1<br>4 | 3<br>2 6     | 9            | 2<br>6       | 8<br>7       | 2<br>9     |
| 1 3<br>4 9      | 6              | 2                | 8      | 1 3<br>4 7   | 3<br>4       | 1 5<br>9 7   | 1<br>4 9     | 4 5<br>7 9 |

|            |          |        |              |          |            |            |            |            |
|------------|----------|--------|--------------|----------|------------|------------|------------|------------|
| 9          | 6        | 3      | 1<br>4 7     | 1<br>4   | 1<br>4 7   | 2<br>5     | 5<br>8     | 2<br>8     |
| 1          | 5        | 2      | 3            | 9        | 8          | 6          | 7          | 4          |
| 8          | 7        | 4      | 2            | 6        | 5          | 1 3<br>9   | 1<br>9     | 3<br>9     |
| 2 3<br>2 3 | 4        | 5      | 8            | 7        | 2<br>6 9   | 1 3<br>6 9 | 1<br>6 9   | 3<br>6 9   |
| 2 3        | 1        | 8      | 6<br>9       | 5        | 2<br>6 9   | 7          | 4          | 3<br>6 9   |
| 6          | 9        | 7      | 1<br>4       | 3        | 1<br>4     | 8          | 2          | 5          |
| 7          | 2<br>8   | 1<br>6 | 1<br>4 5 6 9 | 1<br>4 8 | 1<br>4 6 9 | 2<br>5     | 3<br>8     | 1 2<br>6   |
| 5          | 3<br>8   | 9      | 1<br>6       | 2        | 1 3<br>6   | 4          | 1<br>8 6   | 7          |
| 4          | 2 3<br>8 | 1<br>6 | 1<br>5 6 7   | 1<br>8   | 1 3<br>6 7 | 9          | 1<br>5 6 8 | 1 2<br>6 8 |

|            |                   |                 |            |          |          |          |              |              |
|------------|-------------------|-----------------|------------|----------|----------|----------|--------------|--------------|
| 9          | 1<br>5 6<br>8 7 8 | 1<br>5 6<br>7 8 | 4          | 5 6<br>8 | 3        | 2<br>7 8 | 1 2<br>5 7 8 | 1 2<br>5 6 7 |
| 1<br>8     | 1<br>5 6<br>8     | 2               | 1 5 6<br>8 | 9        | 7        | 3<br>6 8 | 1 3<br>4 5 8 | 1<br>4 5 6   |
| 1<br>7 8   | 4                 | 1<br>5 6<br>7 8 | 2          | 5 6<br>8 | 1<br>8   | 3<br>7 8 | 1<br>5 6     |              |
| 1 2<br>7 8 | 1 2 3<br>8 9      | 4               | 1<br>7     | 2 3<br>8 | 1<br>8 9 | 5        | 6            | 1 2<br>7 9   |
| 5          | 1 2 3<br>9 7      | 1<br>9          | 3<br>7     | 2 3<br>6 | 4        | 2<br>7 9 | 1 2<br>7     | 8            |
| 6          | 1 2<br>8 9        | 1<br>7 8        | 1<br>5     | 2<br>5 8 | 1<br>8 9 | 4        | 1 2<br>7     | 3            |
| 2<br>4 8   | 7                 | 6<br>8          | 3          | 1        | 5        | 2<br>8 9 | 2<br>4 8     | 2<br>4 6 9   |
| 3          | 5 6               | 9               | 8          | 4        | 2        | 1        | 5<br>7       | 5 6<br>7     |
| 1 2<br>4 8 | 1 2<br>5 8        | 1<br>5 8        | 9          | 7        | 6        | 2 3<br>8 | 2 3<br>4 5 8 | 2<br>4 5     |

|            |                 |            |            |                  |              |                |                |            |
|------------|-----------------|------------|------------|------------------|--------------|----------------|----------------|------------|
| 8          | 1 2<br>7 9      | 6          | 3          | 2<br>4 5 9       | 1<br>4 5 9   | 1 2<br>5 7     | 1 2<br>5 7     | 1 2<br>5 7 |
| 2 3<br>7   | 4               | 1 2 3<br>7 | 6          | 2<br>5 8         | 1<br>5 8     | 1 2 3<br>5 7 8 | 1 2 3<br>5 7 8 | 9          |
| 2 3<br>9   | 1 2<br>9        | 5          | 1 2<br>9   | 2<br>8 9         | 7            | 4              | 1 2 3<br>6 8   | 1 2 3<br>6 |
| 1          | 2<br>5 6<br>9   | 2 3        | 7          | 2 3<br>4 5 6 9   | 4 5 6<br>9   | 8              | 2 3<br>4 5 9   | 2 3<br>5   |
| 2 3<br>7   | 2<br>5 6<br>9 7 | 2 3        | 2<br>4 5 9 | 2 3<br>4 5 6 8 9 | 4 5 6<br>8 9 | 1 2 3<br>5 7 9 | 1 2 3<br>4 5 9 | 1 2 3<br>5 |
| 2 3<br>7 9 | 8               | 4          | 2<br>5 9   | 1<br>5 9         | 6            | 2 3<br>5 7 9   | 2 3<br>5 7     |            |
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|          |              |            |        |            |          |              |              |          |
|----------|--------------|------------|--------|------------|----------|--------------|--------------|----------|
| 1        | 2<br>7 8     | 3          | 5      | 2<br>8 9   | 2<br>9   | 6<br>7 8     | 6<br>7 8     | 4        |
| 2<br>8   | 6            | 4          | 7 8    | 2<br>7 8   | 1        | 3            | 9            | 5        |
| 9        | 7 8          | 5          | 6      | 4          | 3        | 2            | 1<br>7 8     | 1<br>7   |
| 2 3<br>7 | 1 2<br>7     | 1 2<br>6 7 | 3<br>7 | 2<br>7 9   | 2<br>4 9 | 4 5 6<br>7 9 | 4 5 6<br>7 9 | 8        |
| 2 3<br>8 | 5            | 2<br>7 8   | 1      | 2<br>7 8 9 | 2<br>4 9 | 4<br>7 9     | 3<br>6 7     | 3<br>6   |
| 4        | 8 9          | 7 8 9      | 7 8    | 3<br>7 8   | 6        | 5            | 1            | 2<br>7 3 |
| 5        | 3            | 2<br>8     | 4      | 2<br>9     | 1        | 6            | 4<br>7 8     | 4<br>7 8 |
| 6        | 1 2<br>4 8 9 | 1 2<br>8 9 | 4<br>9 | 2<br>9     | 5        | 7            | 1 3<br>4 8   | 1 2 3    |
| 7        | 1 2<br>4 9   | 1 2<br>9   | 4<br>9 | 2<br>9     | 3        | 8            | 5 6<br>9     | 1 2<br>6 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6 | 2 | 1 | 3 | 5 | 1 | 3 | 1 | 4 | 3 | 8 | 4 | 6 |
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| 1 | 6 | 1 | 4 | 6 | 5 | 1 | 3 | 1 | 2 | 3 | 9 | 2 | 3 |
| 8 |   | 8 |   |   | 7 | 4 | 6 | 7 | 8 | 6 |   | 4 | 6 |
|   | 6 | 7 | 4 | 6 | 3 | 4 | 6 | 2 | 2 | 3 | 2 | 3 | 1 |
| 8 | 9 |   | 8 | 9 |   | 8 |   | 8 | 4 | 5 | 4 | 5 | 6 |
| 2 | 5 |   | 6 | 6 | 4 |   | 5 | 4 | 5 | 2 | 1 | 3 |   |
|   |   | 9 |   | 9 | 7 |   | 7 | 8 | 7 | 8 | 4 |   |   |
| 2 | 5 | 4 |   | 7 | 1 |   | 1 | 5 | 3 | 9 | 4 | 2 | 2 |
|   |   | 8 |   |   | 4 |   | 8 |   |   |   | 6 | 4 | 8 |
| 3 | 1 |   | 1 |   | 2 | 9 | 6 | 4 | 5 | 4 | 5 | 7 |   |
|   | 4 | 8 |   | 8 |   |   |   |   |   |   |   |   |   |
| 4 | 3 | 1 |   | 6 | 8 | 1 | 2 | 1 | 2 | 2 | 2 | 5 | 9 |
|   |   | 9 |   |   | 7 | 5 | 6 | 5 | 7 |   |   |   |   |
| 1 | 6 | 5 | 1 | 6 | 1 | 3 | 4 | 1 | 2 | 1 | 2 | 3 | 7 |
| 8 | 9 |   | 8 | 9 |   | 6 | 9 |   | 8 |   |   |   | 8 |
| 7 | 1 |   | 2 |   | 1 | 3 | 1 | 3 | 1 | 5 | 6 | 4 | 3 |
|   | 8 | 9 |   |   | 9 |   | 5 | 5 |   |   | 9 | 4 | 5 |
|   |   |   |   |   |   |   |   |   |   |   |   | 8 | 9 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 |   | 2 |   | 6 | 3 | 2 | 8 | 4 | 2 | 5 | 1 |   | 4 | 6 |
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| 4 | 5 | 8 | 9 | 7 | 5 | 6 | 4 | 5 | 6 | 5 | 4 | 6 | 1 | 2 |
|   |   |   |   | 9 |   |   | 9 |   | 7 |   |   |   | 8 | 9 |
| 2 | 1 | 6 | 1 | 4 | 6 | 7 | 4 | 6 | 8 |   | 3 | 5 |   | 3 |
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|   | 9 |   |   |   |   | 9 |   |   |   |   |   |   | 7 |   |
| 5 | 3 |   | 5 | 6 | 9 | 1 |   | 2 | 2 | 6 | 8 | 4 |   | 2 |
|   | 9 |   | 7 |   |   |   |   | 6 |   |   |   |   | 7 |   |
| 3 | 4 |   | 1 | 2 | 9 | 8 | 1 | 2 | 6 | 5 |   | 1 | 2 | 1 |
|   |   |   |   |   |   |   | 7 |   | 6 |   | 7 | 9 |   | 6 |
| 6 | 1 | 2 | 1 | 2 | 5 | 4 | 1 | 2 | 4 | 4 | 4 |   | 3 | 1 |
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| 7 | 1 | 2 | 1 | 2 | 5 | 2 | 2 | 6 | 3 | 4 | 2 | 6 | 4 | 5 |
|   | 5 | 9 | 8 | 9 |   | 4 | 9 | 9 |   | 4 | 6 | 9 | 8 | 8 |
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|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 6 | 2 | 4 | 5 | 6 | 2 | 2 | 1 | 3 | 2 | 5 | 6 |   |
| 8 | 9 | 4 | 5 | 6 | 8 | 4 | 5 | 6 | 7 | 8 | 9 | 7 | 8 |
| 4 | 6 | 7 | 4 | 5 | 6 | 2 | 2 | 3 | 2 | 2 | 6 | 1 |   |
| 8 |   |   | 8 |   |   | 8 | 9 |   | 8 | 9 |   |   |   |
| 1 | 6 | 1 | 2 | 3 | 1 | 3 | 2 | 2 | 4 | 2 | 6 | 5 | 6 |
|   | 8 |   | 5 | 6 |   | 5 | 6 | 5 | 6 | 9 | 8 | 9 | 7 |
| 1 | 4 | 1 | 6 | 9 | 1 | 2 | 5 | 6 | 2 | 6 | 1 | 4 | 6 |
| 7 |   |   |   |   | 8 |   |   |   | 8 | 7 | 8 | 7 | 8 |
| 5 | 1 | 3 | 1 | 3 | 1 | 6 | 4 |   | 1 | 1 | 6 | 2 |   |
|   |   | 6 |   | 6 |   | 8 | 9 |   | 7 | 8 | 9 |   |   |
| 2 | 8 | 1 | 4 | 6 | 1 | 6 | 9 | 3 | 7 | 1 | 5 | 4 | 3 |
|   |   |   |   |   | 9 |   |   |   | 9 |   |   |   |   |
| 1 | 4 | 1 | 4 | 5 | 6 | 1 | 6 | 4 | 6 | 1 | 5 | 3 | 4 |
| 7 | 8 |   |   |   |   | 9 |   | 9 |   | 7 | 8 | 7 | 8 |
| 3 | 1 | 4 | 1 | 4 | 6 | 1 | 2 | 6 | 7 | 5 | 1 | 2 | 9 |
|   |   |   |   |   |   | 6 |   |   | 8 |   | 4 |   |   |
| 1 | 4 | 9 | 1 | 4 | 5 | 3 | 8 | 4 | 2 | 6 | 1 | 2 | 4 |
| 7 |   |   | 7 |   |   |   |   |   | 7 |   | 4 | 5 | 7 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 |   | 5 | 1 |   |   | 6 | 6 | 2 | 3 | 4 |   |
|   | 7 | 8 |   | 7 | 8 | 7 | 8 |   |   |   |   |   |
| 2 | 9 | 4 |   | 3 | 1 | 4 | 3 | 5 | 6 | 8 | 7 |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 3 |   | 4 | 3 |   | 2 | 4 | 3 | 1 | 5 | 9 |   |
|   | 7 | 8 |   |   | 7 | 8 |   |   |   |   |   |   |
| 1 |   | 3 | 9 | 2 | 5 |   | 6 | 6 | 4 | 1 | 2 | 5 |
| 4 |   |   |   | 8 |   | 8 |   |   | 7 |   |   |   |
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|   |   |   |   |   |   |   |   |   |   |   |   |   |
| 8 | 6 | 1 | 2 | 5 |   |   |   | 4 | 5 | 1 | 2 | 3 |
|   |   | 4 |   |   | 7 | 9 | 7 | 9 |   |   |   |   |
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|   | 7 | 8 |   |   | 7 | 8 |   |   |   |   | 8 |   |
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|   | 7 |   |   | 7 | 8 |   |   |   |   |   |   |   |
| 5 | 3 | 4 | 3 | 6 | 9 | 5 | 3 | 2 | 3 | 5 | 2 | 1 |
|   | 5 | 6 | 8 |   |   | 8 |   |   | 7 | 7 |   |   |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 5 | 3 | 6 | 1 | 7 | 8 | 4 | 5 | 4 | 3 | 4 | 3 |   |
|   |   | 9 |   |   |   |   |   | 9 |   |   |   |   |   |
| 1 | 4 |   | 5 | 2 | 3 | 3 | 2 | 5 | 6 | 5 | 7 | 3 | 6 |
|   |   |   | 8 | 5 | 6 | 5 | 6 | 9 |   | 8 |   |   |   |
| 7 | 5 | 3 | 5 | 3 | 3 | 1 | 5 | 2 | 1 | 3 | 6 |   |   |
|   | 9 |   | 8 | 9 |   |   | 8 |   |   |   |   |   |   |
| 6 | 1 | 2 | 3 | 4 | 2 | 9 | 4 | 2 | 1 | 2 | 1 | 4 | 5 |
|   |   |   |   | 7 | 8 |   | 7 |   | 4 | 8 |   |   |   |
| 8 | 1 | 2 | 5 | 4 | 5 | 6 | 4 | 5 | 6 | 3 | 1 | 4 | 6 |
|   |   |   | 9 | 7 |   |   | 7 |   |   | 9 | 7 |   |   |
| 4 | 2 | 5 | 7 | 2 | 3 | 5 | 6 | 3 | 1 | 2 | 6 | 8 |   |
|   |   |   |   | 8 |   | 8 |   |   | 9 |   | 8 |   |   |
| 5 |   | 6 | 1 | 9 | 4 | 6 | 3 | 1 | 2 | 1 | 4 | 4 | 2 |
|   | 7 |   |   |   | 8 |   |   | 7 | 8 |   | 8 | 7 | 8 |
| 9 | 8 | 1 | 2 | 4 | 5 | 1 | 4 | 5 | 4 | 5 | 6 | 1 | 2 |
|   |   | 4 |   | 7 |   | 7 |   |   |   |   |   | 4 | 7 |
| 3 |   | 6 | 1 | 4 | 7 | 8 | 2 | 4 | 6 | 1 | 5 | 9 |   |
|   | 7 |   |   | 7 | 8 |   |   | 4 | 7 | 8 |   |   |   |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 9 | 1 | 2 | 3 | 6 | 8 | 1 | 3 | 7 | 4 | 2 | 3 | 5 |
|   | 5 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | 6 | 4 | 2 | 3 | 2 | 4 | 5 | 4 | 3 | 9 | 1 | 8 |   |   |
| 7 |   | 7 |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 2 | 1 | 2 | 3 | 4 | 2 | 1 | 7 | 2 | 3 | 2 | 3 | 2 | 3 |
| 4 | 5 | 4 |   |   | 9 |   |   |   | 5 | 6 | 5 |   | 5 | 6 |
| 1 | 2 | 1 | 2 | 3 | 5 | 4 | 1 | 1 | 4 | 8 | 6 | 2 | 3 | 9 |
| 7 |   | 7 |   |   |   |   | 9 | 7 | 9 |   |   |   |   |   |
| 8 | 6 | 1 | 3 | 5 | 1 | 2 | 1 | 3 | 3 | 4 | 3 |   |   |   |
|   |   | 4 |   |   | 7 |   |   |   |   | 7 |   |   |   |   |
| 1 | 2 | 1 | 2 | 4 | 9 | 3 | 6 | 8 | 1 | 2 | 2 | 2 | 2 |   |
| 4 |   | 4 |   |   |   |   |   |   | 4 | 5 | 5 | 4 | 5 |   |
| 7 |   | 7 |   |   |   |   |   |   | 7 |   |   |   |   |   |
| 3 | 4 | 4 | 6 | 1 | 2 | 5 | 6 | 4 | 5 | 6 | 5 | 7 |   |   |
|   |   | 8 |   |   |   |   |   |   |   |   | 8 | 9 |   |   |
| 2 | 6 | 5 | 2 | 6 |   | 4 |   | 6 | 2 | 3 | 2 | 3 | 1 |   |
| 7 |   | 7 |   |   | 7 | 8 |   | 9 |   |   | 8 | 9 |   |   |
| 9 | 1 | 2 | 1 | 2 | 4 | 6 | 3 | 5 | 6 | 4 | 5 | 6 | 2 | 6 |
|   | 4 | 7 | 8 |   |   |   |   |   |   |   | 8 |   | 4 | 5 |

|                             |                               |                                 |                                 |                               |                           |                                 |                               |                               |
|-----------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------|---------------------------------|-------------------------------|-------------------------------|
| 4                           | <sup>2 3</sup> <sub>5 8</sub> | <sup>2 3</sup> <sub>5 6 8</sub> | <sup>2 3</sup> <sub>5 6 9</sub> | <sup>2 3</sup> <sub>5 6</sub> | 7                         | <sup>1 2</sup> <sub>9</sub>     | <sup>1</sup> <sub>8 9</sub>   | <sup>1 2</sup> <sub>8 9</sub> |
| <sup>3</sup> <sub>9</sub>   | 7                             | <sup>2 3</sup> <sub>9</sub>     | 1                               | <sup>2 3</sup>                | 8                         | 4                               | 5                             | 6                             |
| <sup>5 6</sup>              | 1                             | <sup>2</sup> <sub>5 6 8</sub>   | <sup>2</sup> <sub>5 6 9</sub>   | <sup>2</sup> <sub>5 6</sub>   | 4                         | <sup>7</sup> <sub>9 7 8 9</sub> |                               | 3                             |
| 2                           | 6                             | <sup>5</sup> <sub>7</sub>       | <sup>3</sup> <sub>7 8</sub>     | <sup>4 5</sup> <sub>8</sub>   | 9                         | <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>4 7</sub>   | <sup>1</sup> <sub>7</sub>     |
| 8                           | <sup>3</sup> <sub>9</sub>     | 1                               | <sup>2 3</sup> <sub>7</sub>     | <sup>2 3</sup> <sub>6 4</sub> | <sup>2 3</sup>            | <sup>2 3</sup> <sub>7</sub>     | <sup>3</sup> <sub>6 7 9</sub> | 5                             |
| <sup>5</sup> <sub>7 9</sub> | <sup>3</sup> <sub>5 9</sub>   | 4                               | <sup>2 3</sup> <sub>7</sub>     | <sup>2 3</sup> <sub>5 6</sub> | 1                         | <sup>2 3</sup> <sub>5</sub>     | 8                             | <sup>3</sup> <sub>7 9</sub>   |
| <sup>1</sup> <sub>7 9</sub> | <sup>3</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>7 8 9</sub>   | <sup>3</sup> <sub>6</sub>       | <sup>5</sup> <sub>8</sub>     | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>5</sub>       | <sup>3</sup> <sub>7 9</sub>   | 2 4                           |
| <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>5</sub>     | <sup>2 3</sup> <sub>8</sub>     | <sup>2 3</sup> <sub>5</sub>     | <sup>2 3</sup>                | 4 9 6                     | <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>7 8</sub>   |
| <sup>1</sup> <sub>4</sub>   | <sup>3</sup> <sub>6 9</sub>   | 4                               | <sup>3</sup> <sub>8 9</sub>     | <sup>2 3</sup> <sub>8</sub>   | 7                         | <sup>1 2 3</sup>                | 5                             | <sup>1</sup> <sub>8 9</sub>   |

|                             |                                   |                                 |                               |                               |                               |                               |                                 |                               |
|-----------------------------|-----------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|
| 7                           | 1                                 | 8                               | <sup>5</sup> <sub>9</sub>     | 4                             | 2                             | <sup>5</sup> <sub>7</sub>     | 6                               | <sup>3</sup> <sub>9</sub>     |
| 9                           | <sup>2 3</sup> <sub>6</sub>       | <sup>2 3</sup> <sub>6</sub>     | <sup>3</sup> <sub>5 6 8</sub> | <sup>3</sup> <sub>5 6 8</sub> | <sup>1</sup> <sub>5 6</sub>   | <sup>1 2 3</sup> <sub>7</sub> | <sup>1 2 3</sup> <sub>7 8</sub> | 4                             |
| 5                           | <sup>2 3</sup> <sub>4</sub>       | <sup>2 3</sup> <sub>6 4</sub>   | <sup>3</sup> <sub>8 9</sub>   | 7                             | <sup>1</sup> <sub>6</sub>     | <sup>1 2 3</sup> <sub>8</sub> | <sup>1 2 3</sup> <sub>9</sub>   |                               |
| 2                           | 9                                 | <sup>1</sup> <sub>4 5 7</sub>   | <sup>5</sup> <sub>8</sub>     | <sup>5</sup> <sub>8</sub>     | 3                             | 6                             | <sup>1</sup> <sub>4 7</sub>     | <sup>1</sup> <sub>7</sub>     |
| <sup>1</sup> <sub>4 8</sub> | <sup>3</sup> <sub>6 7 8</sub>     | <sup>1</sup> <sub>4 6</sub>     | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>6</sub>     | <sup>2</sup> <sub>6</sub>     | 9                             | <sup>1 2 3</sup> <sub>4 7</sub> | <sup>1 2 3</sup> <sub>7</sub> |
| <sup>1</sup> <sub>6</sub>   | <sup>3</sup> <sub>5 6</sub>       | <sup>1</sup> <sub>5 6</sub>     | <sup>3</sup> <sub>5 6</sub>   | 4                             | <sup>2</sup> <sub>5 6</sub>   | 7                             | <sup>1 2 3</sup> <sub>7</sub>   | 8                             |
| 3                           | <sup>2</sup> <sub>4</sub>         | <sup>1 2</sup> <sub>6 4</sub>   | <sup>6</sup>                  | 7                             | 9                             | <sup>4</sup> <sub>6</sub>     | 8                               | <sup>1 2</sup> <sub>4</sub>   |
| <sup>4</sup> <sub>8</sub>   | <sup>2</sup> <sub>4 5 6 7 8</sub> | <sup>2</sup> <sub>4 5 6 7</sub> | <sup>3</sup> <sub>5 6</sub>   | 1                             | <sup>4 5 6</sup> <sub>7</sub> | <sup>2 3</sup> <sub>4 7</sub> | 9                               | <sup>2 3</sup> <sub>6 7</sub> |
| <sup>1</sup> <sub>4</sub>   | <sup>6</sup> <sub>4 5 6 7</sub>   | 9                               | 2                             | <sup>3</sup> <sub>5 6</sub>   | 8                             | <sup>1</sup> <sub>4 7</sub>   | <sup>3</sup> <sub>4 7</sub>     | <sup>1</sup> <sub>3 6</sub>   |

|                               |                                     |                                 |                                 |                               |                               |                                 |                                 |                               |
|-------------------------------|-------------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|
| 6                             | <sup>5</sup> <sub>7 9</sub>         | <sup>4 5</sup> <sub>7 9</sub>   | 3                               | <sup>1</sup> <sub>4 7 9</sub> | 2                             | 8                               | <sup>4</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>9</sub>     |
| <sup>4</sup> <sub>8 9</sub>   | 1                                   | <sup>4</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>7 8 9</sub>   | <sup>4</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>6 7 9</sub> | <sup>4</sup> <sub>6 7 9</sub>   | 5                               | 2                             |
| <sup>4</sup> <sub>8 9</sub>   | 2                                   | <sup>4</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>7 8 9</sub>   | <sup>1</sup> <sub>4 5 7</sub> | <sup>1</sup> <sub>4 5 7</sub> | <sup>1</sup> <sub>4 5 7</sub>   | <sup>3</sup> <sub>4 6 7 9</sub> | <sup>1</sup> <sub>3 6 9</sub> |
| 7                             | <sup>4 5</sup> <sub>9</sub>         | 2                               | <sup>1</sup> <sub>4</sub>       | <sup>3</sup> <sub>9</sub>     | 8                             | <sup>1</sup> <sub>5</sub>       | <sup>3</sup> <sub>9</sub>       | <sup>3</sup> <sub>1 3 9</sub> |
| <sup>1</sup> <sub>5 9</sub>   | <sup>5 6</sup> <sub>9</sub>         | <sup>1</sup> <sub>5 6 9</sub>   | <sup>2</sup> <sub>5 7 9</sub>   | <sup>2 3</sup> <sub>7 9</sub> | <sup>3</sup> <sub>5 9</sub>   | <sup>5 6</sup> <sub>9</sub>     | 8                               | 4                             |
| 3                             | <sup>4 5 6</sup> <sub>9</sub>       | 8                               | <sup>4 5</sup> <sub>9</sub>     | <sup>1</sup> <sub>4 9</sub>   | <sup>1</sup> <sub>4 5 9</sub> | <sup>1</sup> <sub>5 6 9</sub>   | 2                               | 7                             |
| 2                             | 8                                   | <sup>4</sup> <sub>7 9</sub>     | 1                               | 5                             | <sup>4</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>4 6 9</sub>   | <sup>3</sup> <sub>4 6 9</sub>   | <sup>3</sup> <sub>6 9</sub>   |
| <sup>1</sup> <sub>4 9</sub>   | <sup>3</sup> <sub>6 4 7 9</sub>     | <sup>1</sup> <sub>6 4 7 9</sub> | <sup>4</sup> <sub>7 9</sub>     | 8                             | <sup>4</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>4 6 7 9</sub> | 2                               | <sup>1</sup> <sub>4 6 9</sub> |
| <sup>1</sup> <sub>4 5 9</sub> | <sup>3</sup> <sub>5 6 4 5 6 9</sub> | <sup>2</sup> <sub>4 9</sub>     | <sup>2 3</sup> <sub>4 6 9</sub> | <sup>3</sup> <sub>4 6 9</sub> | 7                             | <sup>1</sup> <sub>4 6 9</sub>   | 8                               |                               |

|                             |                               |                               |                               |                                   |                                   |                                 |                                   |                               |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|-----------------------------------|-------------------------------|
| 1                           | <sup>3</sup> <sub>7</sub>     | 5                             | 2                             | 8                                 | <sup>3</sup> <sub>9</sub>         | <sup>3</sup> <sub>7</sub>       | <sup>3</sup> <sub>6 4 7</sub>     | <sup>3</sup> <sub>4 6 9</sub> |
| 2                           | <sup>3</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7 8 9</sub> | 4                             | <sup>1</sup> <sub>5 9</sub>       | 6                                 | <sup>1</sup> <sub>7</sub>       | <sup>3</sup> <sub>5 7</sub>       | <sup>3</sup> <sub>7 9</sub>   |
| <sup>4</sup> <sub>9</sub>   | <sup>3</sup> <sub>4 6 9</sub> | <sup>3</sup> <sub>4 9</sub>   | 7                             | <sup>1</sup> <sub>5 9</sub>       | <sup>3</sup> <sub>5 9</sub>       | <sup>1</sup> <sub>5 6</sub>     | 8                                 | 2                             |
| <sup>4 5</sup> <sub>8</sub> | <sup>4</sup> <sub>7 8</sub>   | 6                             | <sup>1</sup> <sub>5 8</sub>   | <sup>3</sup> <sub>4 5 7</sub>     | 2                                 | 9                               | <sup>4 5</sup> <sub>7</sub>       | <sup>3</sup> <sub>4 7</sub>   |
| 3                           | 9                             | 2                             | <sup>5 6</sup> <sub>7</sub>   | <sup>4 5 6</sup> <sub>7</sub>     | <sup>4 5</sup>                    | 8                               | <sup>4 5 6</sup> <sub>7</sub>     | 1                             |
| <sup>4 5</sup> <sub>8</sub> | 1                             | <sup>4</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>8 7 9</sub> | <sup>3</sup> <sub>4 5 6 8 9</sub> | <sup>3</sup> <sub>4 5 6 8 9</sub> | <sup>2 3</sup> <sub>5 6 7</sub> | <sup>2 3</sup> <sub>4 5 6 7</sub> | <sup>4</sup> <sub>6</sub>     |
| 6                           | 2                             | <sup>1</sup> <sub>3</sub>     | <sup>5</sup> <sub>3</sub>     | <sup>1</sup> <sub>5</sub>         | 7                                 | 4                               | 9                                 | 8                             |
| <sup>4</sup> <sub>8 9</sub> | <sup>3</sup> <sub>4 8 9</sub> | <sup>1</sup> <sub>4 8 9</sub> | <sup>3</sup> <sub>8</sub>     | <sup>1 2 3</sup> <sub>6 4</sub>   | <sup>1</sup> <sub>8</sub>         | <sup>1 2</sup> <sub>6 7</sub>   | <sup>1 2</sup> <sub>6 7</sub>     | 5                             |
| 7                           | 5                             | <sup>1</sup> <sub>4 8</sub>   | 9                             | <sup>1 2</sup> <sub>4 6 8</sub>   | <sup>1</sup> <sub>4 8</sub>       | <sup>1 2</sup> <sub>6</sub>     | <sup>1 2</sup> <sub>6</sub>       | 3                             |

|                                 |                               |                                 |                             |                               |                               |                             |                                 |                               |
|---------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------|---------------------------------|-------------------------------|
| <sup>1 2 3</sup> <sub>8 9</sub> | 7                             | <sup>1</sup> <sub>8 9</sub>     | <sup>2 3</sup> <sub>9</sub> | 6                             | <sup>2 3</sup> <sub>1</sub>   | <sup>4</sup> <sub>9</sub>   | 5                               |                               |
| <sup>2 3</sup> <sub>5 9</sub>   | <sup>3</sup> <sub>5</sub>     | <sup>5 6</sup> <sub>9</sub>     | 4                           | <sup>2 3</sup> <sub>7 9</sub> | 1                             | 8                           | <sup>2</sup> <sub>7 9</sub>     | <sup>2 3</sup> <sub>6 9</sub> |
| 4                               | <sup>1</sup> <sub>3</sub>     | <sup>1</sup> <sub>6 9</sub>     | 8                           | <sup>2 3</sup> <sub>7 9</sub> | 5                             | <sup>1</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>6 7 9</sub> | <sup>2 3</sup> <sub>6 9</sub> |
| 6                               | 2                             | <sup>4</sup> <sub>7 8 9</sub>   | 1                           | <sup>3</sup> <sub>8 9 7</sub> | <sup>3</sup> <sub>5</sub>     | <sup>4</sup> <sub>8 9</sub> | <sup>4</sup> <sub>8 9</sub>     |                               |
| <sup>3</sup> <sub>7 8 9</sub>   | <sup>4</sup> <sub>8</sub>     | <sup>4</sup> <sub>7 8 9</sub>   | 5                           | <sup>2</sup> <sub>8 9 7</sub> | <sup>2</sup> <sub>4 6 9</sub> | <sup>6</sup> <sub>8 9</sub> | <sup>6</sup> <sub>8 9</sub>     | 1                             |
| <sup>1</sup> <sub>5 8 9</sub>   | <sup>1</sup> <sub>4 5 8</sub> | <sup>1</sup> <sub>4 5 8 9</sub> | 6                           | <sup>4</sup> <sub>8 9</sub>   | <sup>8 9</sup>                | 2                           | 3                               | 7                             |
| <sup>1</sup> <sub>7 8</sub>     | <sup>5 6</sup> <sub>8</sub>   | 3                               | <sup>2</sup> <sub>7 9</sub> | <sup>1 2</sup> <sub>8 9</sub> | 4                             | <sup>1</sup> <sub>7 9</sub> | <sup>6</sup> <sub>7 8 9</sub>   | <sup>2</sup> <sub>8 9</sub>   |
| <sup>1</sup> <sub>7 8</sub>     | <sup>1</sup> <sub>4 8</sub>   | <sup>6</sup> <sub>8</sub>       | <sup>2</sup> <sub>7 9</sub> | 5                             | <sup>8 9</sup>                | 3                           | <sup>1</sup> <sub>7 8 9</sub>   | <sup>6 4</sup> <sub>8 9</sub> |
| <sup>1</sup> <sub>7 8</sub>     | 9                             | <sup>1</sup> <sub>4 7 8</sub>   | <sup>2 3</sup> <sub>7</sub> | <sup>1 2 3</sup> <sub>8</sub> | 6                             | <sup>1</sup> <sub>4 7</sub> | <sup>5</sup> <sub>4 8</sub>     |                               |

|                               |                                 |                             |                             |                           |                               |                               |                               |                               |
|-------------------------------|---------------------------------|-----------------------------|-----------------------------|---------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| <sup>2</sup> <sub>7</sub>     | 5                               | 8                           | <sup>2</sup> <sub>6 9</sub> | 1                         | <sup>2</sup> <sub>6 9</sub>   | <sup>2</sup> <sub>7 9</sub>   | 3                             | 4                             |
| 4                             | 6                               | 9                           | <sup>2</sup> <sub>8</sub>   | 7                         | <sup>2</sup> <sub>8</sub>     | <sup>2</sup> <sub>8</sub>     | 5                             | 1                             |
| <sup>2 3</sup> <sub>7</sub>   | <sup>2 3</sup> <sub>1</sub>     | <sup>2</sup> <sub>8 9</sub> | 5                           | 4                         | <sup>2</sup> <sub>7 8 9</sub> | <sup>2</sup> <sub>6</sub>     | 6                             | <sup>2</sup> <sub>9</sub>     |
| <sup>2</sup> <sub>5 8 9</sub> | <sup>2</sup> <sub>8 9</sub>     | 7                           | 4                           | 3                         | <sup>2</sup> <sub>6 8 9</sub> | 1                             | <sup>5 6</sup> <sub>8 9</sub> |                               |
| <sup>1 2</sup> <sub>8 9</sub> | <sup>1 2</sup> <sub>4 8 9</sub> | 3                           | 5                           | <sup>2</sup> <sub>8</sub> | <sup>2</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>6 8 9</sub> | <sup>7</sup> <sub>8 9</sub>   |                               |
| <sup>5</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>8 9</sub>     | 6                           | <sup>8 9</sup>              | 7                         | 1                             | <sup>4 5</sup> <sub>8 9</sub> | 2                             | 3                             |
| <sup>1</sup> <sub>9</sub>     | <sup>1</sup> <sub>9</sub>       | <sup>2</sup> <sub>5</sub>   | <sup>2</sup> <sub>8</sub>   | 4                         | <sup>2</sup> <sub>8</sub>     | 3                             | 7                             | <sup>5 6</sup> <sub>8 9</sub> |
| 6                             | 7                               | <sup>2</sup> <sub>5</sub>   | 1                           | 9                         | 3                             | <sup>2</sup> <sub>5</sub>     | 4                             | 8                             |
| <sup>3</sup> <sub>8</sub>     | <sup>3</sup> <sub>8</sub>       | 4                           | 7                           | <sup>2</sup> <sub>6</sub> | 5                             | <sup>2</sup> <sub>6 9</sub>   | 1                             | <sup>2</sup> <sub>9</sub>     |



|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 |   | 3 | 2 | 1 | 3 | 5 | 3 | 6 | 4 | 8 | 9 | 4 | 8 | 7 |
|   | 6 |   | 5 | 4 | 7 | 9 | 4 |   | 2 | 3 | 1 |   |   |   |
| 1 |   |   | 7 | 4 |   | 2 | 8 |   | 5 | 4 | 6 | 4 | 6 | 9 |
| 5 | 1 | 4 | 6 | 4 | 1 | 3 | 6 | 9 | 4 | 8 | 9 | 7 | 8 | 9 |
| 2 | 6 | 4 | 2 | 6 | 4 | 6 | 9 | 4 | 5 | 6 | 8 | 9 | 1 | 5 |
| 7 | 1 | 4 | 3 | 8 | 4 | 3 | 4 | 3 | 2 | 6 | 1 | 4 | 5 | 4 |
| 2 | 6 | 8 | 5 | 1 | 6 | 9 | 8 | 9 | 4 | 7 | 1 | 2 | 6 | 8 |
| 3 | 1 | 2 | 6 | 1 | 6 | 5 | 7 | 8 | 1 | 4 | 8 | 9 | 4 | 5 |
| 4 | 1 | 2 | 6 | 7 | 1 | 5 | 2 | 1 | 3 | 1 | 2 | 5 | 6 | 8 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 1 | 5 | 1 | 2 | 6 | 8 | 4 | 2 | 7 | 5 | 3 | 9 | 5 | 3 |
|   | 3 | 6 | 9 | 8 | 9 | 7 | 8 | 6 | 3 | 5 | 1 | 2 | 4 | 3 | 6 | 4 |
| 2 | 3 | 4 | 5 | 4 | 9 | 7 | 9 | 6 | 2 | 3 | 2 | 5 | 3 | 8 | 1 |   |
| 5 | 1 | 4 | 8 | 9 | 4 | 1 | 2 | 4 | 1 | 2 | 3 | 4 | 2 | 6 | 3 | 1 |
| 7 | 6 | 1 | 2 | 4 | 1 | 2 | 3 | 5 | 9 | 4 | 2 | 8 | 1 | 2 | 3 | 5 |
| 1 | 2 | 9 | 8 | 9 | 3 | 7 | 5 | 1 | 2 | 7 | 8 | 4 | 1 | 2 | 5 | 6 |
| 1 | 4 | 9 | 7 | 4 | 5 | 1 | 9 | 6 | 3 | 5 | 9 | 2 | 4 | 5 | 8 |   |
| 8 | 3 | 1 | 6 | 9 | 4 | 1 | 2 | 5 | 7 | 6 | 9 | 2 | 6 | 7 | 9 | 3 |
| 4 | 6 | 2 | 4 | 5 | 6 | 7 | 9 | 7 | 8 | 7 | 8 | 9 | 1 | 4 | 5 | 6 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3 | 4 | 5 | 9 | 4 | 5 | 3 | 1 | 4 | 5 | 7 | 2 | 4 | 5 | 8 | 6 |
| 4 | 2 | 8 | 7 | 4 | 5 | 2 | 6 | 4 | 5 | 8 | 9 | 3 | 1 | 4 | 5 |   |
| 4 | 3 | 6 | 1 | 4 | 5 | 6 | 4 | 5 | 4 | 5 | 7 | 8 | 4 | 5 | 9 | 2 |
| 1 | 4 | 7 | 4 | 5 | 1 | 4 | 5 | 7 | 8 | 2 | 6 | 3 | 1 | 5 | 7 | 9 |
| 9 | 2 | 5 | 6 | 1 | 2 | 5 | 6 | 7 | 4 | 3 | 4 | 3 | 1 | 2 | 5 | 8 |
| 2 | 3 | 7 | 8 | 9 | 1 | 5 | 6 | 7 | 2 | 4 | 5 | 6 | 7 | 8 | 9 |   |
| 2 | 3 | 8 | 9 | 1 | 5 | 6 | 7 | 2 | 5 | 8 | 9 | 4 | 7 | 1 | 2 | 3 |
| 1 | 2 | 4 | 6 | 4 | 2 | 6 | 4 | 5 | 4 | 8 | 1 | 2 | 5 | 6 | 9 | 3 |
| 5 | 2 | 3 | 1 | 2 | 3 | 4 | 6 | 2 | 3 | 9 | 7 | 1 | 2 | 1 | 6 | 8 |

|         |           |         |             |       |           |     |       |           |
|---------|-----------|---------|-------------|-------|-----------|-----|-------|-----------|
| 1       | 7 8 9     | 5 8 9   | 4 7 9       | 3 4 9 | 4 8 9     | 6   | 2     | 4 5 7     |
| 5 8 9   | 7 8 9     | 6       | 1 4 7       | 2     | 1 4 8 9   | 7   | 5 4   | 3 1 4 5 7 |
| 2 3     | 4         | 2 3     | 1 6 7       | 5     | 1 6       | 9   | 8     | 1 7       |
| 4 2 3   | 5         | 1 2 3   | 1 2 3 4     | 9     | 1 2 3 4   | 8   | 7     | 6         |
| 2 3 6   | 2 3 6     | 1 2 3 6 | 1 2 3 6     | 3 6   | 7         | 4   | 5     | 9         |
| 8       | 8         | 8       |             |       |           |     |       |           |
| 4 6 9   | 6 9       | 7       | 5           | 8     | 4 6 9     | 2   | 1     | 3         |
| 2 3 6   | 1         | 4       | 2 3 6       | 3 6   | 5         | 7   | 3 9   | 7 8       |
| 3 5 6 9 | 3 6 9     | 5 9     | 8           | 7     | 4 3 6 9   | 1   | 4 3 6 | 2         |
| 7       | 2 3 6 8 9 | 2 3 8 9 | 2 3 4 6 8 9 | 1     | 2 3 4 6 9 | 5 3 | 3 4 6 | 4 5 8     |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3 | 6 | 2 | 4 | 6 | 3 | 8 | 4 | 5 | 1 | 5 | 6 | 4 | 5 | 9 |   |
| 4 | 3 | 6 | 9 | 4 | 6 | 1 | 4 | 5 | 6 | 7 | 5 | 6 | 4 | 5 | 8 |   |
| 5 | 1 | 8 | 7 | 4 | 6 | 4 | 9 | 4 | 6 | 3 | 2 | 1 | 5 | 6 | 8 |   |
| 4 | 3 | 6 | 4 | 5 | 6 | 2 | 7 | 9 | 7 | 8 | 9 | 4 | 6 | 1 | 7 | 8 |
| 1 | 5 | 6 | 7 | 2 | 5 | 6 | 4 | 7 | 9 | 5 | 8 | 9 | 3 | 7 | 8 | 9 |
| 9 | 8 | 4 | 7 | 2 | 3 | 6 | 1 | 5 | 7 | 6 | 4 | 7 | 9 | 1 | 2 | 3 |
| 8 | 4 | 6 | 4 | 3 | 1 | 3 | 5 | 4 | 7 | 9 | 1 | 7 | 1 | 3 | 5 | 9 |
| 4 | 2 | 4 | 5 | 1 | 4 | 5 | 9 | 8 | 9 | 7 | 3 | 8 | 7 | 5 | 6 |   |
| 2 | 3 | 7 | 5 | 9 | 8 | 9 | 1 | 6 | 8 | 2 | 4 | 5 | 3 | 7 | 1 | 6 |

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 7 | 9 | 4 | 9 | 6 | 3 | 5 | 1 | 9 | 1 | 2 | 4 | 8 | 9 | 7 | 8 |
| 8 | 1 | 2 | 5 | 9 | 7 | 9 | 4 | 1 | 7 | 9 | 6 | 9 | 1 | 2 | 3 | 1 | 3 |
| 1 | 7 | 9 | 3 | 4 | 7 | 9 | 1 | 6 | 7 | 8 | 9 | 2 | 1 | 6 | 4 | 5 | 9 |
| 3 | 7 | 1 | 2 | 5 | 9 | 1 | 2 | 8 | 1 | 2 | 5 | 9 | 6 | 1 | 2 | 4 |   |
| 1 | 2 | 5 | 6 | 1 | 2 | 3 | 8 | 1 | 2 | 6 | 3 | 4 | 1 | 2 | 5 | 9 | 1 |
| 4 | 1 | 2 | 5 | 6 | 9 | 1 | 2 | 3 | 7 | 9 | 7 | 9 | 1 | 2 | 3 | 8 |   |
| 1 | 2 | 9 | 4 | 1 | 2 | 3 | 4 | 2 | 8 | 6 | 7 | 1 | 3 | 1 | 3 | 5 | 9 |
| 1 | 2 | 7 | 9 | 6 | 1 | 2 | 3 | 5 | 1 | 9 | 8 | 1 | 3 | 4 | 1 | 3 | 6 |
| 1 | 5 | 6 | 9 | 8 | 1 | 5 | 9 | 1 | 4 | 3 | 7 | 1 | 6 | 2 | 5 | 9 |   |

|                             |                      |                        |                        |                        |                        |
|-----------------------------|----------------------|------------------------|------------------------|------------------------|------------------------|
| 1<br>4 8                    | 6 4 6                | 2                      | 1<br>8 9               | 6 3 5                  | 4 4 6 7                |
| 1<br>4 8                    | 6 5 7                | 1 2<br>8 9             | 1 2<br>6               | 1 2<br>6               | 4 3 3 1 3<br>9 4 6 6 9 |
| 9                           | 3 1 3<br>6 8         | 4                      | 1 1<br>7 8 6 7 8       | 5 2                    | 1 6                    |
| 1 2<br>4 6                  | 7 1 4 6              | 3                      | 1 2<br>4 8             | 1 2<br>4 8             | 4 2 5<br>9 9 9         |
| 3                           | 4 2 6 4 6<br>9 9     | 2 6                    | 5 4 2 6                | 7 1 8                  |                        |
| 5 8                         | 1 4                  | 1 2<br>7               | 1 2<br>4 7             | 9 6 4 3 2 3            |                        |
| 4 2<br>4 6                  | 1 4 5 6              | 3 2 6                  | 9 4 7                  | 8 5 6 2 3<br>7 5 6     |                        |
| 2 2 3<br>4 6 4 5 6<br>8 9 9 | 3 3 4 5 6<br>7 8 7 9 | 2 6 4 6 4 6<br>7 8 7 9 | 2 3 2 3<br>4 6 4 6 7 9 | 1 5 6 2 3<br>7 9 5 6 9 |                        |
| 7                           | 2 3 6 3<br>9 8 9     | 5                      | 1 2 6 1 2 3<br>8 8 8   | 2 3 3 4                |                        |

|  |                        |                    |                  |                    |                    |
|--|------------------------|--------------------|------------------|--------------------|--------------------|
| 2 4 2<br>7 7 7                             | 6 5 1 3 9 5<br>8 8 8 8 | 1 3 9 5<br>8 8 8 8 | 1 3 3 3<br>9 9 9 | 2 2 2 2<br>5 8 8 8 | 4 6 5 8<br>8 8 8 8 |
| 8 5 6 3 4 9 2 1 7                          |                        |                    |                  |                    |                    |
| 1 1 3 3<br>9 9 9                           | 7 2 5 8 8              | 4 6 5 8<br>8 8 8 8 |                  |                    |                    |
| 6 6 4 8 7 3 1 5 2                          |                        |                    |                  |                    |                    |
| 3 8 1 2 9 5 7 4 6                          |                        |                    |                  |                    |                    |
| 2 5 7 2 4 1 6 9 8 3                        |                        |                    |                  |                    |                    |
| 1 6 2 3 5 3 4 8 7 1<br>4 5 7 9 7 8 8 7 8 9 |                        |                    |                  |                    |                    |
| 4 5 7 3 5 1 2 3 2 6 2 3 4 9                |                        |                    |                  |                    |                    |
| 4 1 6 9 8 2 3 2 5 2 3 1 4                  |                        |                    |                  |                    |                    |

|  |         |         |
|--|---------|---------|
| 3 9 1 2<br>8   | 6 1 4 8 | 2 5 4 7 |
| 1 2 1 2 6 1 5 5 1 4 8 4 2 3 3<br>8 7 8 7 8 8 7 9 9 7 9         |         |         |
| 5 4 7 3 2 3 8 1 6  |         |         |
| 1 2 1 2 3 2 3 1 4 6 3 1 3<br>4 8 9 8 9 7 8 9 7 8 9 6 4 3       |         |         |
| 4 6 7 3 1 6 4 5 6 2 4 5 3<br>8 9 8 9 8 9 8 9 9 8 9             |         |         |
| 1 2 6 5 1 2 3 4 3 2 1 3 1 3<br>8 9 8 9 7 8 9 8 9 7 9 8 9 7 8 9 |         |         |
| 1 2 6 8 5 1 2 3 4 1 2 3 1 7 1<br>9 9 9 6 9 9 6 9 9 9           |         |         |
| 7 1 2 6 4 1 2 5 5 6 1 2 6 3 6 1 5 8 9 8 9                      |         |         |
| 1 6 1 3 1 3 1 5 5 6 7 1 5 6 4 2<br>9 9 8 9 8 9 9 9 9 9 9 9 9   |         |         |

|  |  |  |
|--|--|--|
| 1 5 6 2 4 4 3 1 2 1 2<br>4 9 8 8 7 9 7 8 9 4 9                                     |  |  |
| 1 7 1 2 2 3 3 2 2 2 2 2 1 2 1 2<br>4 9 4 5 4 5 6 4 5 6 4 5 6 4 6 9                 |  |  |
| 8 4 2 3 2 4 5 4 5 6 1 4 5 6 2 5 6 7<br>9 9 9 9 9 9 9 9 9 9 9 9 9 9                 |  |  |
| 4 5 6 1 4 2 7 8 4 5 6 9 2 5 6 2 6<br>4 5 6 4 4 4 4 5 6 4 5 6 7 8 7 5 6 1 2 6 1 2 6 |  |  |
| 4 5 6 4 2 3 2 9 4 5 6 4 5 6 2 5 6 7 8 7 5 6 1 2 6 1 2 6                            |  |  |
| 5 6 2 2 1 5 6 2 2 5 6 4 3 7 8 7 5 6 7 8 7 5 6 4 3                                  |  |  |
| 2 8 5 6 1 4 3 4 7 7 9 4 9 4 9 4 9  |  |  |
| 1 3 3 1 3 3 4 4 4 3 4 3 4 6 3 6 5<br>4 9 4 9 7 9 8 7 8 7 8 7 8 7 8 7 8 9           |  |  |
| 4 3 6 4 4 5 3 4 5 3 9 1 2 3 2 4 8<br>7 9 7 9 8 7 8 7 8 7 8 7 8 7 8 7 8 9           |  |  |

|  |  |  |
|--|--|--|
| 2 3 1 7 1 1 2 6 9 2 2 3<br>4 5 8 4 5 8 4 5 4 5 4 5 2 3 8                     |  |  |
| 2 4 5 6 4 5 6 4 6 7 3 4 5 2 1 2<br>8 8 9 8 8 9 9 9 9 9 9 9 9 9 9             |  |  |
| 2 3 1 4 5 4 2 3 8 1 2 2 6 4 5 2 3<br>4 5 4 5 9 9 9 9 9 9 9 9 9 9 9           |  |  |
| 2 6 6 2 3 6 5 1 2 3 2 4<br>7 8 8 8 9 7 7 9 7 9 7 9                           |  |  |
| 9 3 1 2 4 4 8 6 5  |  |  |
| 2 4 5 6 4 5 6 4 6 3 6 3 1 2 3 2 1 2<br>7 7 9 8 8 7 7 9 7 7 9 7 7 9 7 7 9     |  |  |
| 1 7 3 6 5 6 9 2 3 4 2 5 2 6<br>8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                 |  |  |
| 4 3 2 5 1 3 1 4 6 4 3 1 8 9<br>4 6 4 7 7 7 7 7 7 7 7 7 7 7 7                 |  |  |
| 4 6 4 6 9 1 4 5 6 1 2 4 2 1 2 5 1 2 6<br>8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 |  |  |

|  |  |  |
|--|--|--|
| 3 3 2 1 1 6 6 1 3 1 3 5<br>4 4 6 7 8 9 7 8 9 7 8 6 8 9 8 7 8 4 7 8       |  |  |
| 4 1 4 5 2 5 5 3 6 7 8 4 7 8 4 7 8<br>7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 |  |  |
| 3 3 5 6 5 1 5 6 1 5 6 4 1 3 2 9<br>7 8 7 8 7 7 8 7 8 7 8 8 8 8 8 8 8     |  |  |
| 6 3 9 2 2 3 7 1 2 3 4 1 3 4 1 3<br>4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8     |  |  |
| 4 3 2 4 3 5 5 3 1 5 8 9 5 8 5 3 6<br>7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 |  |  |
| 5 3 1 4 6 6 9 9 7 8 7 8 7 8 7 8<br>7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8   |  |  |
| 1 3 3 1 9 5 7 1 3 2 5 3 2<br>4 4 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8           |  |  |
| 1 2 3 3 8 1 2 1 2 2 1 3 1 3 1 3<br>7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7     |  |  |
| 1 2 5 5 3 1 2 2 1 4 5 6 1 4 8<br>7 9 7 9 7 7 8 7 8 7 8 7 8 7 8 7 8 8     |  |  |

|                         |                         |                         |                     |                         |                       |                       |                       |                           |
|-------------------------|-------------------------|-------------------------|---------------------|-------------------------|-----------------------|-----------------------|-----------------------|---------------------------|
| <sup>2 3</sup><br>7 5   | <sup>2 3</sup><br>7     | <sup>2 3</sup><br>8     | 6                   | 9                       | <sup>1</sup><br>4 5   | <sup>1</sup><br>4 5   | <sup>1</sup><br>4 5   | <sup>3</sup><br>3         |
| 1                       | <sup>3</sup><br>8 9     | <sup>3</sup><br>6 7     | <sup>4</sup><br>7   | <sup>4</sup><br>7       | <sup>5</sup><br>5 8 9 | 2                     | <sup>5 6</sup><br>9   | <sup>3</sup><br>3         |
| <sup>3</sup><br>5 6     | 4                       | <sup>3</sup><br>6 7     | <sup>2 3</sup><br>5 | <sup>2 3</sup><br>5     | 1                     | 7                     | <sup>5 6</sup><br>8 9 | <sup>3</sup><br>5 6 9     |
| <sup>2</sup><br>8       | 6                       | 7                       | <sup>2</sup><br>5   | <sup>2</sup><br>5 8 9   | 4                     | 3                     | <sup>1</sup><br>5 9   | <sup>1</sup><br>5 9       |
| 9                       | <sup>1</sup><br>8       | <sup>3</sup><br>4       | <sup>1</sup><br>8   | <sup>3</sup><br>7 8     | <sup>5 6</sup><br>7 8 | <sup>5</sup><br>5 8   | <sup>3</sup><br>5 6 8 | <sup>4 5 6</sup><br>4 5 6 |
| <sup>2 3</sup><br>4     | 5                       | <sup>2 3</sup><br>4     | 1                   | <sup>2 3</sup><br>7 9   | <sup>2 3</sup><br>6   | <sup>4</sup><br>9     | <sup>4</sup><br>6 7 9 | 8                         |
| <sup>2 3</sup><br>4 7 8 | <sup>1 2 3</sup><br>7 8 | <sup>1 2 3</sup><br>4 8 | 9                   | <sup>2 3</sup><br>4 5 8 | <sup>2 3</sup><br>5 8 | 6                     | <sup>1</sup><br>4 5 8 | <sup>1 2</sup><br>4 5     |
| <sup>2 3</sup><br>4 8   | <sup>2 3</sup><br>8 9   | <sup>2 3</sup><br>4 8 9 | 1                   | 7                       | <sup>4 5</sup><br>8 9 | <sup>4 5</sup><br>8 9 | <sup>4 5</sup><br>9   | <sup>2</sup><br>2         |
| <sup>2</sup><br>4 8     | <sup>1</sup><br>9       | 5                       | <sup>2</sup><br>4 6 | <sup>2</sup><br>4 8     | <sup>2</sup><br>6 8   | <sup>1</sup><br>9     | 3                     | 7                         |

|                     |                     |                   |                           |                       |                       |                       |                       |                       |
|---------------------|---------------------|-------------------|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 7                   | <sup>2</sup><br>5   | 9                 | 6                         | 3                     | 8                     | <sup>1 2</sup><br>4 5 | <sup>2</sup><br>4     | <sup>1 2</sup><br>4 5 |
| 8                   | 1                   | 4                 | 2                         | <sup>7 9</sup><br>7 9 | 5                     | 3                     | <sup>7 9</sup><br>7 9 | 6                     |
| 3                   | <sup>2</sup><br>5   | 6                 | <sup>7 9</sup><br>7 9     | 4                     | 1                     | <sup>7 9</sup><br>7 9 | 8                     | <sup>2</sup><br>5     |
| 2                   | 4                   | 8                 | 5                         | 1                     | <sup>7 9</sup><br>7 9 | 6                     | <sup>7 9</sup><br>7 9 | 3                     |
| 1                   | <sup>6</sup><br>7 9 | 3                 | <sup>7 8 9</sup><br>7 8 9 | 2                     | <sup>6</sup><br>7 9   | <sup>4</sup><br>7 9   | <sup>5</sup><br>4 8   | <sup>4</sup><br>8     |
| <sup>6</sup><br>9 7 | <sup>6</sup><br>9   | 5                 | 3                         | <sup>8</sup><br>8     | 4                     | <sup>2</sup><br>7 9   | 1                     | <sup>2</sup><br>8     |
| <sup>4</sup><br>6 9 | <sup>6</sup><br>8 9 | 2                 | <sup>1</sup><br>4 8 9     | <sup>5 6</sup><br>8 9 | <sup>3</sup><br>6 9   | <sup>1</sup><br>4 5   | <sup>3</sup><br>4 6   | 7                     |
| 5                   | <sup>6</sup><br>8   | <sup>1</sup><br>7 | <sup>1</sup><br>4 7 8     | <sup>6</sup><br>7 8   | <sup>2 3</sup><br>6 7 | <sup>1 2</sup><br>4 6 | <sup>2 3</sup><br>4 6 | 9                     |
| <sup>4</sup><br>6 9 | 3                   | <sup>1</sup><br>7 | <sup>1</sup><br>4 7       | <sup>5 6</sup><br>7 9 | <sup>2</sup><br>6 9   | 8                     | <sup>2</sup><br>4 6   | <sup>1 2</sup><br>4 5 |

|                         |                       |                         |                       |                       |                       |                       |                       |                       |
|-------------------------|-----------------------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 4                       | <sup>2</sup><br>7     | <sup>2 3</sup><br>6     | <sup>3</sup><br>8     | 5                     | <sup>1</sup><br>9     | <sup>1</sup><br>9     | <sup>2</sup><br>7 8   | <sup>3</sup><br>8     |
| <sup>3</sup><br>5 9     | 8                     | 1                       | <sup>3</sup><br>4 9   | <sup>3</sup><br>7     | 2                     | <sup>4 5</sup><br>9   | <sup>4</sup><br>7 9   | 6                     |
| <sup>2 3</sup><br>5 6   | <sup>2</sup><br>7 9   | <sup>2 3</sup><br>6 9   | <sup>3</sup><br>4 8 9 | <sup>3</sup><br>6 4   | <sup>1</sup><br>6 4   | <sup>1 2</sup><br>4 5 | <sup>1</sup><br>4 8 9 | <sup>3</sup><br>8 9   |
| <sup>1</sup><br>5 8 9   | <sup>3</sup><br>7 9   | <sup>5</sup><br>8 9     | <sup>3</sup><br>6     | 4                     | <sup>7 8</sup><br>7 8 | <sup>1</sup><br>6 9   | <sup>1</sup><br>8 9   | 2                     |
| <sup>2 3</sup><br>7 8 9 | <sup>2</sup><br>4 7 9 | <sup>2 3</sup><br>4 8 9 | 1                     | <sup>3</sup><br>6 7 8 | <sup>4</sup><br>9     | <sup>5</sup><br>4 8 9 | <sup>4</sup><br>8 9   | <sup>5</sup><br>4 8 9 |
| <sup>1</sup><br>6 8     | <sup>1</sup><br>4 6   | <sup>6</sup><br>4 8     | 2                     | 9                     | 5                     | <sup>3</sup><br>4 8   | 7                     | <sup>1</sup><br>4 9   |
| <sup>1</sup><br>6 9     | 3                     | <sup>4</sup><br>6 9     | 7                     | 2                     | <sup>4</sup><br>9     | 8                     | <sup>1</sup><br>4 9   | 5                     |
| <sup>1 2</sup><br>8 9   | 5                     | <sup>2</sup><br>4 8 9   | <sup>4</sup><br>9     | <sup>1</sup><br>8     | 3                     | 7                     | <sup>1</sup><br>4 9   | <sup>1</sup><br>9     |
| <sup>1</sup><br>8 9     | <sup>1</sup><br>4 9   | 7                       | 5                     | <sup>1</sup><br>8     | 6                     | 2                     | <sup>1</sup><br>4 9   | <sup>1</sup><br>9     |

|                     |                     |                           |                         |                         |                         |                       |                         |                         |
|---------------------|---------------------|---------------------------|-------------------------|-------------------------|-------------------------|-----------------------|-------------------------|-------------------------|
| 1                   | <sup>4</sup><br>7   | <sup>3</sup><br>6         | 5                       | <sup>4</sup><br>7 8     | <sup>6</sup><br>4 6     | <sup>3</sup><br>8     | <sup>3</sup><br>6       | <sup>3</sup><br>7 8 9   |
| <sup>4</sup><br>7 9 | 2                   | <sup>4</sup><br>7 9       | <sup>3</sup><br>6 7 8   | <sup>1</sup><br>4 6     | <sup>1</sup><br>4 6     | <sup>3</sup><br>6     | 5                       | <sup>1</sup><br>7 8     |
| <sup>4</sup><br>7   | 8                   | <sup>4</sup><br>7         | <sup>3</sup><br>6 7     | <sup>1 2</sup><br>4 6   | <sup>9</sup><br>7       | <sup>1 2 3</sup><br>6 | <sup>1</sup><br>5 6     | <sup>1</sup><br>5       |
| <sup>2</sup><br>4 7 | <sup>4</sup><br>7 9 | <sup>1</sup><br>4 7       | <sup>5</sup><br>7 9     | <sup>8</sup><br>7 9     | <sup>1 2</sup><br>6     | <sup>1</sup><br>4 7   | <sup>3</sup><br>6 7 9   | <sup>1 2 3</sup><br>7 9 |
| 3                   | 5                   | <sup>1</sup><br>7 8       | <sup>6</sup><br>9       | <sup>1 2</sup><br>7     | <sup>4</sup><br>6       | 1                     | <sup>1</sup><br>7 8     | <sup>1 2</sup><br>7 8   |
| <sup>2</sup><br>4 7 | <sup>6</sup><br>4 7 | <sup>1</sup><br>4 6 7 8 9 | <sup>3</sup><br>6 7 8 9 | <sup>4</sup><br>6 7 8 9 | <sup>3</sup><br>6 7 8 9 | <sup>1 2</sup><br>6   | <sup>1</sup><br>4 7 8 9 | <sup>1 2</sup><br>7 8 9 |
| <sup>4</sup><br>7 9 | 1                   | <sup>4</sup><br>7         | <sup>3</sup><br>6 7 8   | <sup>2</sup><br>8       | <sup>5</sup><br>9       | <sup>9</sup><br>7 8   | <sup>2</sup><br>7 8     | 6                       |
| <sup>5</sup><br>7 9 | <sup>3</sup><br>6 7 | <sup>3</sup><br>6 7       | <sup>1 2</sup><br>8     | <sup>1 2 3</sup><br>5   | <sup>1 2 3</sup><br>8   | <sup>2</sup><br>8     | <sup>9</sup><br>7 8     | 4                       |
| 8                   | 9                   | 2                         | <sup>4</sup><br>6 7     | <sup>4</sup><br>6 7     | 7                       | <sup>1</sup><br>5     | <sup>3</sup><br>1 3     | <sup>1</sup><br>5       |

|                       |                           |                           |                     |                     |                         |                         |                       |                       |
|-----------------------|---------------------------|---------------------------|---------------------|---------------------|-------------------------|-------------------------|-----------------------|-----------------------|
| <sup>1</sup><br>7     | <sup>6</sup><br>9         | 8                         | 3                   | 4                   | <sup>1</sup><br>6 9     | 5                       | 2                     | <sup>1</sup><br>7 9   |
| <sup>1</sup><br>4 9   | <sup>1 2</sup><br>6 9     | <sup>1 2</sup><br>6 9     | <sup>2</sup><br>6 9 | 7                   | <sup>1 2 3</sup><br>6 9 | <sup>3</sup><br>6 9     | 5                     | 8                     |
| <sup>1</sup><br>7 9   | <sup>1 2</sup><br>5 6 7 9 | <sup>1 2</sup><br>5 6 7 9 | <sup>2</sup><br>6 9 | 8                   | <sup>1 2 3</sup><br>6 9 | <sup>3</sup><br>6 4 7 9 | <sup>3</sup><br>4 6 9 | <sup>3</sup><br>4 6 9 |
| <sup>3</sup><br>7 9   | 4                         | <sup>2</sup><br>7 9       | 1                   | <sup>2</sup><br>6 9 | 8                       | <sup>3</sup><br>5 6 9   | <sup>3</sup><br>9     | <sup>3</sup><br>6 9   |
| <sup>1</sup><br>8 9   | <sup>3</sup><br>6 9       | <sup>1</sup><br>6 9       | 5                   | <sup>4</sup><br>6 9 | <sup>4</sup><br>6 9     | <sup>4</sup><br>6 9     | 2                     | 7                     |
| <sup>6</sup><br>9     | <sup>2</sup><br>5 6 9     | <sup>2</sup><br>5 9       | 3                   | <sup>4</sup><br>6 9 | 7                       | <sup>4 5 6</sup><br>9   | 8                     | 1                     |
| 2                     | <sup>1</sup><br>7 9       | 6                         | 8                   | <sup>5</sup><br>4 9 | <sup>1</sup><br>4 9     | <sup>3</sup><br>4 7 9   | <sup>3</sup><br>4 9   | <sup>3</sup><br>4 9   |
| 5                     | <sup>1</sup><br>7 9       | <sup>3</sup><br>7 9       | <sup>1</sup><br>7 9 | <sup>3</sup><br>6 9 | <sup>1</sup><br>6 9     | <sup>3</sup><br>6 9     | 8                     | <sup>3</sup><br>7 9   |
| <sup>4</sup><br>7 8 9 | <sup>3</sup><br>7 9       | <sup>4</sup><br>7 8 9     | <sup>2</sup><br>6 9 | <sup>3</sup><br>6 9 | <sup>2</sup><br>6 9     | <sup>1</sup><br>4 7 9   | 1                     | <sup>3</sup><br>6 9   |

|                         |                         |                           |                     |                         |                         |                         |                         |                       |
|-------------------------|-------------------------|---------------------------|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|-----------------------|
| <sup>1 2</sup><br>5 9   | 6                       | 7                         | 3                   | <sup>1</sup><br>5 9     | 4                       | <sup>1 2</sup><br>5 8   | <sup>2</sup><br>5 8 9   | <sup>1 2</sup><br>5 9 |
| <sup>1 2 3</sup><br>5 9 | <sup>1 2 3</sup><br>6 9 | 4                         | <sup>1</sup><br>6 9 | <sup>1</sup><br>5 6 9   | 8                       | <sup>1 2</sup><br>5 6   | <sup>2</sup><br>5 6 9   | 7                     |
| 8                       | <sup>1</sup><br>9       | <sup>1</sup><br>5         | 2                   | <sup>1</sup><br>5 6 7 9 | <sup>1</sup><br>5 6     | 4                       | <sup>5 6</sup><br>9     | 3                     |
| 6                       | <sup>1 2 3</sup><br>8   | <sup>1 2 3</sup><br>8     | <sup>1</sup><br>7   | 4                       | <sup>1 2 3</sup><br>7 5 | 9                       | <sup>2</sup><br>7 8     | <sup>1 2</sup><br>5   |
| 4                       | 5                       | 9                         | 8                   | <sup>1</sup><br>7       | <sup>3</sup><br>6 7     | <sup>1 2 3</sup><br>7 6 | <sup>1 2 3</sup><br>7   | <sup>2</sup><br>1 2 6 |
| <sup>1 2 3</sup><br>7 9 | 7                       | <sup>1 2 3</sup><br>8     | <sup>1</sup><br>6   | <sup>1</sup><br>5 6     | <sup>3</sup><br>9       | <sup>1 2 3</sup><br>5 8 | <sup>1 2</sup><br>4 5 6 | <sup>1 2</sup><br>5 6 |
| <sup>3</sup><br>7 9     | <sup>3</sup><br>8 9     | <sup>5</sup><br>8         | <sup>6</sup><br>7 9 | 2                       | <sup>3</sup><br>7       | <sup>5 6</sup><br>7 9   | 1                       | 4                     |
| <sup>1 2 3</sup><br>7 9 | 4                       | <sup>1 2 3</sup><br>5 7 9 | 5                   | <sup>1</sup><br>7 9     | <sup>3</sup><br>6 7     | <sup>2</sup><br>7 9     | <sup>2</sup><br>6 9     | 8                     |
| <sup>1 2</sup><br>7 5   | <sup>1 2</sup><br>9     | 6                         | 4                   | 8                       | <sup>1</sup><br>7       | <sup>2</sup><br>5       | 3                       | <sup>2</sup><br>5 9   |

|                        |                        |                        |                          |                          |                        |                        |                        |                        |
|------------------------|------------------------|------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|
| <div>2 3<br/>5 8</div> | <div>5<br/>7</div>     | <div>2 3<br/>5 7</div> | 9                        | <div>1 2 3<br/>8</div>   | 6                      | <div>1 3<br/>8</div>   | <div>5 3<br/>8</div>   | 4                      |
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| <div>2 3<br/>5 8</div> | <div>5 6<br/>9</div>   | 1                      | <div>2<br/>4 5 7 8</div> | <div>2 3<br/>4 8</div>   | <div>3<br/>4 5 7</div> | <div>3<br/>6 8 9</div> | <div>5 6<br/>8 9</div> | <div>5 6<br/>8 9</div> |
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| 6                      | 2                      | <div>4 5<br/>9</div>   | <div>1<br/>4 5</div>     | <div>1<br/>4</div>       | 8                      | <div>3<br/>9</div>     | <div>5 3<br/>9</div>   | 7                      |
| <div>1 3<br/>5</div>   | <div>1<br/>4 5 7</div> | <div>3<br/>4 5 7</div> | 6                        | 9                        | <div>2<br/>4 5</div>   | <div>2 3<br/>8</div>   | <div>2 3<br/>5 8</div> | <div>1<br/>5 8</div>   |
| 7                      | 3                      | <div>2<br/>4 6</div>   | <div>2<br/>4 8</div>     | <div>2<br/>4 6 8</div>   | <div>4<br/>9</div>     | 5                      | 1                      | <div>6<br/>8 9</div>   |
| <div>1 2<br/>4</div>   | <div>1<br/>6</div>     | 8                      | <div>1 2<br/>4 7</div>   | 5                        | <div>1<br/>4 7 9</div> | <div>2 6 4<br/>9</div> | <div>2 6<br/>9</div>   | 3                      |
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|                        |                        |                            |                      |                          |                        |                      |                      |                        |
|------------------------|------------------------|----------------------------|----------------------|--------------------------|------------------------|----------------------|----------------------|------------------------|
| <div>5 6<br/>7 8</div> | 9                      | <div>2<br/>4 5 6 7 8</div> | 1                    | <div>2<br/>4 5 6 7</div> | <div>2<br/>4 5 7</div> | <div>6<br/>8</div>   | 3                    | <div>2<br/>7</div>     |
| <div>3<br/>5 6 7</div> | <div>2 3<br/>7</div>   | <div>2<br/>5 6 7</div>     | <div>2<br/>5</div>   | <div>2<br/>5 6 7</div>   | 8                      | 4                    | 1                    | 9                      |
| <div>2<br/>6 7 8</div> | <div>2<br/>4 7 8</div> | 1                          | 3                    | 9                        | <div>2<br/>4 7</div>   | <div>6<br/>8 7</div> | <div>2<br/>5</div>   | 5                      |
| <div>3<br/>5 7 8</div> | <div>2 3<br/>7 8</div> | <div>2<br/>5 7 8</div>     | 9                    | <div>2<br/>5 7</div>     | 6                      | 1                    | <div>2<br/>4 7</div> | <div>2<br/>4 7</div>   |
| 1                      | <div>2<br/>7</div>     | <div>2<br/>5 7</div>       | 8                    | <div>2<br/>4 5 7</div>   | <div>2<br/>4 5 7</div> | 9                    | 6                    | 3                      |
| 4                      | 6                      | 9                          | <div>2<br/>7</div>   | <div>1 3<br/>5</div>     | <div>1 3<br/>5</div>   | 5                    | <div>2<br/>7 8</div> | <div>2<br/>7 8</div>   |
| 2                      | <div>4<br/>8</div>     | <div>4<br/>8 6</div>       | <div>4 5<br/>8</div> | <div>1 3<br/>5 8</div>   | <div>1 3<br/>5 9</div> | 7                    | <div>5<br/>9</div>   | <div>1 4 6<br/>8</div> |
| <div>6<br/>7 8</div>   | 1                      | 3                          | <div>4 5<br/>7</div> | <div>5<br/>7 8</div>     | <div>5<br/>7 9</div>   | 2                    | <div>5<br/>9</div>   | <div>4 6<br/>8</div>   |
| 9                      | 5                      | <div>4<br/>7 8</div>       | 6                    | <div>1 2<br/>7 8</div>   | <div>1 2<br/>7</div>   | 3                    | <div>4<br/>8</div>   | <div>1<br/>4 8</div>   |

|                          |                              |                      |                      |                        |                      |                        |                        |                        |
|--------------------------|------------------------------|----------------------|----------------------|------------------------|----------------------|------------------------|------------------------|------------------------|
| <div>1 3<br/>8 9</div>   | <div>1 2 3<br/>8</div>       | <div>2<br/>9</div>   | <div>1<br/>6 9</div> | <div>1<br/>6 9</div>   | 5                    | <div>2<br/>8 9</div>   | 4                      | 7                      |
| <div>1<br/>5 7 8 9</div> | <div>1 2<br/>5 6 7 8 9</div> | <div>2<br/>5</div>   | 3                    | 4                      | <div>1<br/>7 9</div> | <div>2<br/>6 8 9</div> | <div>1 2<br/>8 9</div> | <div>6<br/>8 9</div>   |
| <div>1<br/>7 9</div>     | <div>1<br/>6 7</div>         | 4                    | 2                    | 8                      | <div>1<br/>7 9</div> | 5                      | 3                      | <div>1<br/>6 9</div>   |
| <div>1<br/>4 7 9</div>   | <div>1<br/>7</div>           | 3                    | 5                    | 2                      | <div>1<br/>9</div>   | <div>4<br/>7 8 9</div> | 6                      | <div>1<br/>4 8 9</div> |
| <div>1<br/>4 5 9</div>   | <div>1 2<br/>5 7</div>       | 8                    | <div>1<br/>7 9</div> | <div>1<br/>6 7 9</div> | 3                    | <div>2<br/>4 7 9</div> | <div>1 2<br/>4</div>   | <div>9<br/>9</div>     |
| 6                        | <div>1 2<br/>7</div>         | <div>2<br/>7 9</div> | 8                    | <div>1<br/>7 9</div>   | 4                    | 3                      | 5                      | <div>1 2<br/>9</div>   |
| 2                        | 4                            | <div>1<br/>7</div>   | <div>1<br/>7</div>   | 3                      | 6                    | <div>8 9<br/>8 9</div> | 5                      |                        |
| <div>3<br/>8</div>       | <div>3<br/>8</div>           | <div>1<br/>5</div>   | <div>1<br/>9</div>   | <div>1<br/>5 9</div>   | 2                    | <div>4 6<br/>4</div>   | 7                      | <div>4 6<br/>6</div>   |
| <div>5<br/>7</div>       | 9                            | 6                    | 4                    | <div>5<br/>7</div>     | 8                    | 1                      | 2                      | 3                      |

|                        |                          |                        |                          |                          |                        |                          |                          |                          |
|------------------------|--------------------------|------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|--------------------------|
| 8                      | <div>1<br/>4 5 6</div>   | <div>1 2<br/>4 5</div> | <div>3<br/>4 7</div>     | <div>2 3<br/>4 6 7</div> | <div>3<br/>4 7</div>   | <div>1 3<br/>4 5 7</div> | <div>1 3<br/>5 7</div>   | 9                        |
| <div>2<br/>5</div>     | <div>4 5<br/>9</div>     | 7                      | 1                        | <div>2 3<br/>4 8 9</div> | <div>3<br/>4 8 9</div> | 6                        | <div>5<br/>8</div>       | <div>2<br/>4 5</div>     |
| <div>1 2<br/>6 7</div> | 3                        | <div>1 2<br/>4</div>   | <div>2<br/>4 6 7 9</div> | <div>2<br/>4 6 8 9</div> | 5                      | <div>1<br/>4 8</div>     | <div>1<br/>7 8</div>     | <div>1 2<br/>4</div>     |
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| <div>1 2<br/>5 6</div> | <div>1<br/>5 6 8 9</div> | <div>1 2<br/>5 9</div> | <div>3<br/>4 5 9</div>   | <div>1 3<br/>4 5 9</div> | <div>1 3<br/>4 9</div> | 7                        | <div>1 3<br/>5 8 9</div> | <div>1 4 5<br/>4 5</div> |
| 4                      | <div>1<br/>5 8 9</div>   | 3                      | <div>5<br/>9</div>       | 7                        | 2                      | <div>1<br/>5 8</div>     | <div>1<br/>5 8 9</div>   | 6                        |
| 9                      | <div>1<br/>4 5</div>     | <div>1<br/>4 5</div>   | 2                        | <div>3<br/>8</div>       | <div>3<br/>8</div>     | <div>1<br/>5</div>       | 6                        | 7                        |
| <div>1<br/>5</div>     | 7                        | 8                      | <div>4 5 6<br/>9</div>   | <div>1 4 5 6<br/>9</div> | <div>1 4<br/>9</div>   | 2                        | <div>1 4 5<br/>4 5</div> | 3                        |
| 3                      | 2                        | 6                      | <div>4 5<br/>7</div>     | <div>1 4 5<br/>4 7</div> | <div>1<br/>4 7</div>   | 9                        | <div>1 4 5<br/>4 8</div> | 8                        |

|                        |                            |                          |                        |                        |                        |                              |                            |   |
|------------------------|----------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------------|----------------------------|---|
| 3                      | 9                          | <div>2<br/>4 5</div>     | <div>5 6<br/>7</div>   | <div>2<br/>6</div>     | 1                      | 8                            | <div>2<br/>4 5</div>       |   |
| <div>1<br/>4 7 8</div> | <div>1 2<br/>4 5 8 7</div> | <div>1 2<br/>4 5 7</div> | <div>1 3<br/>5 9</div> | <div>3 1 2<br/>9</div> | 6                      | <div>4<br/>7 9</div>         | <div>2<br/>4 5 7 9</div>   |   |
| <div>1<br/>7</div>     | <div>1 2<br/>5</div>       | 6                        | 4                      | 8                      | <div>1 2<br/>9</div>   | <div>3<br/>5 9 7 9 7 9</div> | <div>2<br/>5 9</div>       |   |
| 5                      | <div>4<br/>9</div>         | <div>3<br/>6 8</div>     | <div>3<br/>6 9</div>   | <div>3<br/>4 6 9</div> | 7                      | 2                            | 1                          |   |
| <div>1<br/>4</div>     | 7                          | <div>1 3<br/>4 9</div>   | <div>1 3<br/>8</div>   | <div>1 4<br/>8</div>   | 4                      | 5                            | 6                          |   |
| 2                      | <div>1<br/>4 6</div>       | <div>1<br/>4 9</div>     | 7                      | <div>1<br/>4 6</div>   | 5                      | 8                            | <div>4<br/>9</div>         | 3 |
| <div>1<br/>4 7 8</div> | <div>1 2<br/>4 5 8 7</div> | <div>1 2<br/>4 5 7</div> | 9                      | <div>1<br/>4</div>     | 3                      | <div>4 5<br/>7</div>         | <div>4 5<br/>7</div>       |   |
| <div>1<br/>4 7 9</div> | <div>1 3<br/>4 5 7 9</div> | <div>1 3<br/>4 5 9</div> | <div>1<br/>8</div>     | <div>1 6 4<br/>8</div> | <div>1 6 4<br/>8</div> | 2                            | <div>1 3<br/>4 5 7 9</div> |   |
| 6                      | <div>1<br/>4</div>         | <div>3<br/>4 9</div>     | 2                      | 5                      | 7                      | <div>4<br/>9</div>           | <div>3<br/>4 9</div>       | 8 |

|                        |                      |                          |                      |                      |                      |                        |                      |                          |
|------------------------|----------------------|--------------------------|----------------------|----------------------|----------------------|------------------------|----------------------|--------------------------|
| 2                      | 8                    | <div>1<br/>6 9</div>     | <div>6<br/>9</div>   | 3                    | 4                    | 7                      | <div>5 6<br/>9</div> | <div>1 5 6<br/>9</div>   |
| <div>6<br/>7 9</div>   | <div>1<br/>7 9</div> | <div>1 3<br/>6 9</div>   | 5                    | <div>6<br/>9</div>   | <div>2<br/>8</div>   | <div>1 2<br/>6 9</div> | 4                    | <div>1 3<br/>6 8 9</div> |
| 4                      | 5                    | <div>3<br/>6 9</div>     | <div>2<br/>8</div>   | 7                    | 1                    | <div>6<br/>9</div>     | <div>2<br/>8</div>   | <div>3<br/>6 9</div>     |
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| <div>5 6<br/>8 9</div> | <div>1 2<br/>9</div> | <div>1 2<br/>6 8 9</div> | 4                    | <div>2<br/>8</div>   | 7                    | <div>5 6<br/>9</div>   | 3                    | <div>5 6<br/>9</div>     |
| <div>5 6<br/>8 9</div> | <div>2<br/>9</div>   | <div>2<br/>6 8 9</div>   | 1                    | <div>2<br/>8</div>   | 3                    | 4                      | <div>5 6<br/>9</div> | 7                        |
| <div>1<br/>8</div>     | 6                    | 4                        | 3                    | <div>5<br/>9</div>   | <div>2<br/>8</div>   | <div>1 2<br/>5 9</div> | 7                    | <div>1 5<br/>8 9</div>   |
| <div>7 8 9</div>       | <div>2<br/>7 9</div> | <div>2<br/>8 9</div>     | <div>7 8</div>       | 1                    | <div>5 6<br/>7</div> | 3                      | <div>5 6<br/>7</div> | 4                        |
| <div>1<br/>7 8</div>   | 3                    | 5                        | <div>2<br/>7 8</div> | 4                    | <div>6<br/>9</div>   | <div>1<br/>6 9</div>   | <div>2<br/>8</div>   | <div>1 6<br/>8 9</div>   |

|               |          |            |              |                       |                |                     |
|---------------|----------|------------|--------------|-----------------------|----------------|---------------------|
| 2 3<br>7 8    | 4        | 2 3<br>8   | 2 3<br>7     | 5 6                   | 1 3 1<br>8 9 7 | 1 3<br>8 9          |
| 5             | 9        | 3<br>8 6   | 1            | 4 7<br>4 7            | 2              | 4 7 6 4<br>8        |
| 2 3<br>6<br>7 | 2 3<br>7 | 1          | 8            | 2<br>4 7 9            | 3<br>4 5 6 4 5 | 3                   |
| 1             | 5        | 7          | 9            | 3                     | 2              | 4 8 6               |
| 2 3<br>6      | 8        | 2 3<br>6   | 4            | 1<br>7                | 5<br>7         | 1 3 1 2 5<br>5 9    |
| 9             | 2 3      | 4          | 5 6          | 1<br>8                | 6<br>5 8       | 7                   |
| 2<br>4 7 8    | 2<br>7   | 2<br>8 9   | 2<br>7       | 2<br>5 6 4 6<br>7 8 9 | 1<br>8         | 3<br>4 5 8          |
| 2 3<br>4 8    | 1        | 2 3<br>8 9 | 2 3<br>5 6 4 | 2<br>6 4 5<br>8 9     | 7              | 2<br>4 5 6 4 5<br>8 |
| 2 3<br>4 7 8  | 6        | 5          | 2 3<br>7     | 2<br>4 7 8            | 3<br>4 7 8     | 1 2<br>8            |

|              |          |            |            |              |              |            |            |              |
|--------------|----------|------------|------------|--------------|--------------|------------|------------|--------------|
| 1 2<br>5 8 9 | 3        | 6          | 2<br>7 8   | 1 2<br>7 8 9 | 1 2<br>7 8 9 | 1 2<br>5 9 | 4          | 1 2<br>5 7 8 |
| 1 2<br>8 9   | 4        | 7          | 5          | 6            | 1 2<br>8 9   | 1 2<br>9   | 1 2 3<br>8 | 1 2 3<br>8   |
| 1 2<br>5 8 9 | 1 2<br>8 | 1 2<br>5 8 | 4          | 3            | 1 2<br>7 8 9 | 6          | 1 2<br>8   | 1 2<br>5 7 8 |
| 1 2 3<br>5 8 | 1 2<br>8 | 4          | 9          | 1 2<br>5 7 8 | 1 2 3<br>7 8 | 1 2<br>5   | 6          | 1 2<br>5     |
| 7            | 1 2      | 1 2 3<br>5 | 2 3        | 4            | 6            | 8          | 9          | 1 2<br>5     |
| 6            | 9        | 1 2<br>5 8 | 2<br>8     | 1 2<br>5 8   | 1 2<br>5 8   | 3          | 7          | 4            |
| 1 2<br>8     | 5        | 9          | 2 3<br>7 8 | 2<br>7 8     | 2 3<br>7 8   | 4          | 1 2<br>8   | 6            |
| 2 3<br>8     | 6        | 2 3<br>8   | 1          | 2<br>8       | 4            | 7          | 5          | 9            |
| 4            | 7        | 1 2<br>8   | 6          | 5<br>9       | 5<br>9       | 1 2<br>8   | 1 2 3<br>8 | 1 2 3<br>8   |

|              |              |            |            |                |                   |              |              |            |
|--------------|--------------|------------|------------|----------------|-------------------|--------------|--------------|------------|
| 4 5<br>8     | 3            | 2<br>4 5 8 | 4<br>8     | 2<br>4 7 8     | 2<br>6 4 6<br>7 8 | 4 5<br>7 8 9 | 1            | 5<br>7 8 9 |
| 6            | 9            | 2<br>4 5 8 | 1<br>4     | 1 2<br>4       | 2<br>4 7 8        | 2 3<br>4 5 7 | 3            | 5<br>7 8   |
| 1<br>4       | 7            | 1 2<br>4   | 5          | 9              | 3                 | 4<br>8       | 4 6<br>8     | 6          |
| 2            | 4 5 6<br>8 9 | 4<br>8 9   | 4 5<br>7 8 | 1              | 3                 | 4 5 6<br>7   | 5 6<br>7 9   |            |
| 1 3<br>4 8 9 | 1<br>4 5 6 4 | 1 3<br>8 9 | 3<br>4     | 2 3<br>4 5 7 8 | 2<br>4 7 8 9      | 4 5<br>7     | 1 5 6<br>7 9 |            |
| 1 3<br>4     | 1<br>4 5     | 7          | 6          | 4 5<br>4       | 3<br>9            | 2            | 8            | 1<br>5 9   |
| 4 5<br>3     | 8            | 4 5 6<br>3 | 7          | 4<br>6 4       | 6                 | 1            | 9            | 2          |
| 7            | 1<br>4       | 1 3<br>4   | 2          | 1<br>4         | 3<br>8            | 4<br>8 9     | 6            | 5 3<br>5 8 |
| 1 3<br>9     | 2            | 1 3<br>6 9 | 1 3<br>8 9 | 1 3<br>8       | 3<br>6            | 5            |              | 3<br>4     |

|            |                 |            |        |            |          |              |                |              |
|------------|-----------------|------------|--------|------------|----------|--------------|----------------|--------------|
| 4 5<br>8   | 1<br>4 5 6<br>8 | 9          | 3      | 2<br>4 5 6 | 7        | 1 2<br>5 8   | 2<br>5 8       | 1 2<br>8     |
| 2          | 1<br>5 6<br>8   | 1<br>7 8   | 9      | 5 6        | 1 5 6    | 1 3<br>5 8   | 3<br>5 7 8     | 4            |
| 3          | 1<br>4 5        | 1<br>4 5 7 | 8      | 2<br>4 5   | 1 4 5    | 6            | 9              | 1 2<br>7     |
| 5<br>7     | 2<br>5          | 3          | 6      | 8 9        | 8 9      | 4            | 1              | 2<br>7       |
| 4<br>7 8 9 | 4<br>8 9        | 4<br>8     | 5<br>7 | 1          | 4        | 2 3<br>5 8   | 2 3<br>5 6 7 8 | 2 3<br>6     |
| 6          | 1<br>4          | 1<br>4     | 5<br>7 | 4          | 3        | 2<br>5 8     | 3<br>7 8       | 9            |
| 1          | 3               | 4<br>8     | 2      | 6<br>8 9   | 6<br>8 9 | 7            | 4<br>8         | 5            |
| 4 5<br>8 9 | 4 5<br>8 9      | 6          | 1      | 7          | 5<br>8   | 2 3<br>8 9   | 2 3<br>4 8     | 2 3<br>8     |
| 5<br>8 9   | 7               | 2<br>5 8   | 4      | 3<br>5 6   | 3<br>5 6 | 1 2 3<br>8 9 | 2 3<br>6 8     | 1 2 3<br>6 8 |

|          |               |          |               |            |            |            |          |              |
|----------|---------------|----------|---------------|------------|------------|------------|----------|--------------|
| 5        | 1<br>4        | 3        | 6             | 1<br>4 7   | 2          | 1 3<br>7 9 | 8        | 1 3<br>7 9 7 |
| 8        | 1<br>4        | 3<br>4   | 1             | 1<br>4 5 7 | 3<br>4 5   | 1 3<br>7 9 | 6        | 2            |
| 9        | 2             | 7        | 1<br>4        | 6          | 1 3<br>8   | 1 3<br>4   | 5        | 3            |
| 2        | 1<br>5 6<br>8 | 3        | 1<br>5 6<br>8 | 5 8        | 4          | 7 9 7 9 8  | 6        |              |
| 7        | 6<br>7 8 9    | 6<br>8 9 | 2             | 3<br>8     | 3<br>8     | 5          | 4        | 1            |
| 4        | 1<br>5 6<br>8 | 1<br>8   | 9             | 7          | 1 5 6<br>8 | 2 3<br>8   | 2 3<br>8 | 6            |
| 3<br>7   | 4<br>8 9      | 4<br>8 9 | 4 5<br>7 8    | 1<br>7 8   | 5<br>7 8   | 6          | 2 3<br>5 | 3            |
| 1 3<br>7 | 6             | 5        | 7             | 6          | 9          | 2          | 1 3<br>8 | 4            |
| 1<br>7   | 6 4<br>8      | 4<br>8   | 3             | 4 5<br>8   | 5 6<br>7 8 | 1 2<br>7   | 1 2<br>5 | 9            |

|              |                |            |          |            |            |        |            |              |
|--------------|----------------|------------|----------|------------|------------|--------|------------|--------------|
| 3<br>7 8 9   | 3<br>7 8       | 5          | 2<br>8 9 | 6          | 2<br>7 8 9 | 1<br>4 | 2 3<br>7 9 |              |
| 1<br>6       | 1<br>7 8       | 6          | 4        | 1 2<br>8 9 | 1<br>8 9   | 3      | 2<br>5 6   | 5            |
| 7 8 9        | 7 8            | 3<br>6     | 7        | 1<br>5 8 9 | 4          | 8 9    | 5 6<br>9   | 3            |
| 2            | 1<br>8         | 6          | 7        | 5<br>8 9   | 4          | 8 9    | 3<br>5 9   |              |
| 5            | 4<br>7 8       | 3<br>7     | 3        | 1 3<br>4   | 1 3<br>4   | 2      | 6          | 3            |
| 4<br>7 8     | 3<br>4 7 8     | 2 3<br>7 8 | 1        | 4          | 6          | 9      | 5          | 2 3<br>7 8   |
| 3<br>6       | 9              | 2 3<br>6   | 5        | 7          | 8          | 1      | 4          | 2 3          |
| 1 3<br>4 6 7 | 1 2 3<br>4 5 6 | 9          | 4        | 3<br>6 4   | 3<br>7     | 1<br>5 | 2<br>4 7   | 1 2<br>4 5 7 |
| 1 3<br>4 7   | 1 3<br>4 5 7   | 8          | 4        | 3<br>9     | 2          | 1<br>7 | 5<br>7 9   | 6            |
| 1<br>4 7     | 1 2<br>4 5 6   | 2<br>7     | 6        | 4<br>8 9   | 4<br>8 9   | 1<br>5 | 3          | 2<br>4 5 7 9 |

|       |   |   |   |       |     |     |   |     |     |     |       |
|-------|---|---|---|-------|-----|-----|---|-----|-----|-----|-------|
| 1     | 3 | 1 | 3 | 1 2 3 | 2   | 5   | 7 | 6   | 4   | 2 3 | 2 3   |
| 8     |   |   |   | 4     | 8 9 |     |   |     | 4   | 9   |       |
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| 8     |   |   | 7 | 5     | 8 9 | 8 9 |   | 7   | 9   |     | 9     |
| 9     | 6 |   | 2 |       | 1 2 | 1   |   | 4   |     | 8   | 5     |
|       |   |   | 7 |       | 4   | 4   |   | 7   |     |     |       |
| 5     | 3 | 8 | 9 |       | 2   | 2   |   | 4   | 3   | 1   |       |
|       |   |   |   | 7     | 7   |     |   |     | 4   | 5   | 6     |
| 7     | 2 | 4 |   |       | 1   | 6   | 5 | 8   |     | 3   | 3     |
|       |   |   |   |       |     |     |   |     | 9   |     | 9     |
| 6     | 1 | 3 | 1 | 3     | 4   | 4   | 3 | 8   | 2   | 4 5 | 7     |
|       | 5 |   | 5 |       | 9   |     | 9 |     |     |     |       |
| 1 2 3 | 1 | 3 |   |       | 1   | 3   |   | 1   | 3   | 2 3 |       |
| 4 5   | 5 |   | 6 | 4 5   | 4   | 7   |   | 9   | 4 5 | 4 5 | 8     |
|       |   |   |   | 7     | 7   |     |   | 7   |     |     |       |
| 1 2 3 |   | 7 | 8 |       | 1   | 3   | 1 | 3   | 1   | 2 3 | 1 2 3 |
| 4 5   |   |   |   | 4     | 4   | 4   |   | 4   | 5   | 9   | 4     |
|       |   |   |   |       |     |     |   |     | 9   | 9   | 9     |
| 1     | 3 |   |   |       | 1   | 3   |   | 1   | 3   | 3   | 1     |
| 4 5   |   | 9 | 1 | 3     | 4 5 | 7 8 | 2 | 4 5 | 6   | 4   | 6     |

|       |     |     |     |     |     |     |     |       |   |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-------|---|-----|-----|-----|-----|
| 1     | 4   | 6   | 4   | 3   | 5   |     | 6   | 4     | 3 | 2   | 4   | 3   | 7   |
|       | 8   | 8   |     | 6   |     |     | 9   | 8     |   |     | 9   |     |     |
|       | 5   | 4   |     | 3   | 2   | 1   | 1   | 3     | 1 | 3   | 4   | 3   | 6   |
| 7 8 9 |     | 7 8 |     |     |     | 9   | 4   | 8     | 4 |     | 9   |     |     |
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| 6     | 4   | 6   | 4   | 6   | 4   | 6   | 4   |       |   | 9   | 4 5 | 9   |     |
| 2     | 1 2 | 1 2 | 1 2 | 1   | 4   | 6   | 3   | 1 2   | 9 | 8   | 4 5 | 2   |     |
| 6     | 4   | 6   | 4   | 6   | 7   |     |     | 4 5   |   |     |     |     |     |
| 5     | 1 2 | 1 2 | 1 2 | 1   | 4   | 6   | 1 2 | 6     | 9 | 4   | 6   | 4   | 3   |
| 7 8   | 4   | 6   | 7 8 | 7 8 | 6   | 7 8 | 6   |       |   | 7   |     |     |     |
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| 7 8   |     |     |     | 7 8 |     | 7   |     |       | 7 |     |     | 4   | 5   |
| 3     | 1 2 | 1 2 |     | 1   |     | 8   | 6   | 1     | 4 | 5   | 4   | 5   | 1 2 |
|       | 7   | 5   |     | 7   |     |     |     | 7     | 7 | 9   | 7   | 9   | 4 5 |
| 4     |     | 6   | 6   | 9   | 1 2 | 5   | 1 2 | 3     | 1 | 5   | 3   | 2 3 | 1 2 |
|       | 8   | 8   |     |     | 5   |     | 7   | 5     | 7 | 5   | 7   | 5   | 5   |
| 2     |     | 1 2 | 1   | 3   | 1   | 3   | 4   | 1 2 3 | 1 | 3   | 6   | 8   |     |
| 4 5   |     | 7   |     | 7   | 4 5 | 6   | 7   | 5     | 7 |     |     |     |     |

|     |     |     |   |   |       |   |     |       |     |
|-----|-----|-----|---|---|-------|---|-----|-------|-----|
| 1   | 2 3 | 2 3 | 2 | 2 |       | 5 | 2 3 | 9     | 5 6 |
| 4 5 | 4   | 6   | 4 | 7 | 4     | 7 | 5   |       | 8   |
| 7   |     |     |   |   |       |   |     |       |     |
| 6   | 2   | 2   | 3 | 2 | 1     | 2 | 6   | 4     |     |
| 8 9 | 7   | 7   | 9 | 7 | 9     |   | 7 8 |       |     |
|     | 2 3 | 2 3 | 2 |   | 1 2 3 | 1 | 1   | 5     |     |
| 8 9 | 4 5 | 4   | 4 | 7 | 9     | 5 | 7 8 | 8     |     |
| 2   | 1   | 1   | 8 | 5 | 6     | 7 | 3   | 9     |     |
| 4   |     | 4   |   |   |       |   |     |       |     |
| 3   | 6   | 9   | 4 | 4 | 2     | 1 | 1   | 5     |     |
|     |     |     | 7 | 7 |       | 8 | 8   |       |     |
| 7   | 8   | 5   | 1 | 3 | 9     | 4 | 2   | 2     | 6   |
|     |     |     |   |   |       |   | 6   |       |     |
| 4   | 1 2 | 1 2 | 6 | 8 | 3     | 9 | 5   | 7     |     |
|     |     |     |   |   |       |   |     |       |     |
| 5   | 3   | 8   | 2 | 1 | 7     | 6 | 4   | 2 3   |     |
|     | 9   |     | 9 |   |       |   |     |       |     |
| 6   | 3   | 3   | 5 | 2 | 4     | 8 | 1 2 | 1 2 3 |     |
| 9   | 7   | 9   | 7 | 9 |       |   |     |       |     |

|       |     |     |       |     |     |       |       |     |       |     |   |   |
|-------|-----|-----|-------|-----|-----|-------|-------|-----|-------|-----|---|---|
| 1     | 3   | 1   | 3     | 4   | 9   | 1     | 3     | 3   | 1     | 3   | 5 | 2 |
| 8     | 6   | 8   |       |     |     | 7     | 8     | 6   | 7     |     |   |   |
| 5     | 9   | 2 3 | 1 2 3 | 1   | 3   | 4     | 1     | 3   | 1     | 3   | 1 | 6 |
|       |     | 8   | 7     | 7   | 8   |       | 7     |     | 6     |     |   |   |
| 1 2 3 |     | 2 3 | 1 2 3 | 1   | 3   | 2 3   | 1     | 3   | 2 3   | 9   | 4 | 8 |
| 6     | 7   | 6   | 6     | 5   | 6   | 5     | 6     |     |       |     |   |   |
| 2     | 2   | 2   | 2     | 1 2 | 1   | 4 5   | 2     | 5   | 6     | 1 2 | 3 |   |
| 4     | 8   | 8   | 7 8   | 7   |     | 7 8 9 | 7 8 9 |     |       | 8 9 |   |   |
| 2 3   | 2 3 |     |       | 2 3 | 3   | 2 3   | 6     | 6   | 5     | 2   | 7 |   |
| 4     | 6   | 4   | 8     | 6   | 4   | 8 9   | 8 9   |     |       | 8 9 |   |   |
| 9     | 5   | 2 3 | 1 2 3 | 1   | 3   | 2 3   | 1 2   | 1 2 | 1     |     |   |   |
|       |     | 7 8 | 6     | 7   | 7 8 | 7 8   | 6     | 4   | 8     |     |   |   |
| 7     | 1   | 2 3 |       | 5   |     | 3     | 3     | 8   | 1 2 3 | 1   | 6 |   |
| 4     |     | 9   |       |     | 6   | 9     | 9     |     | 6     | 4   |   |   |
| 2 3   | 2 3 | 5   | 4     | 3   | 1   | 2 3   | 2 3   | 6   | 9     |     |   |   |
| 8     | 8   |     | 7     | 6   |     | 7     | 7     |     | 7     |     |   |   |
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|     |   |     |       |       |     |     |       |     |       |       |   |
|-----|---|-----|-------|-------|-----|-----|-------|-----|-------|-------|---|
| 1   | 6 | 5 6 | 3     | 1     | 6   | 7   | 6     | 8   | 4 5 6 | 4 5 6 | 2 |
| 9   |   | 9   |       | 7     |     |     | 9     |     | 7     |       |   |
| 6   | 7 | 2   |       | 3     | 4   | 5   |       |     | 3     | 5 6   | 1 |
| 8 9 |   |     |       | 6     |     | 9   |       |     | 5 6   | 8     |   |
| 1   | 6 | 5 6 | 4     | 1 2 3 | 3   | 1 2 |       | 9   | 5 6   | 3     |   |
| 8   |   |     |       | 7     | 7   | 6   |       | 7 8 |       | 6     |   |
| 4   | 1 | 8   | 4     | 9     | 2   | 3   |       | 6   | 7     | 6     | 5 |
|     |   |     |       |       |     |     |       |     |       |       |   |
| 7   | 3 | 5   | 4     | 8 9   | 8 9 | 6   | 1     | 2   | 4     | 3     |   |
|     |   |     |       |       |     |     |       |     |       |       |   |
| 4   | 2 | 2 3 | 6     | 5     | 1   | 7   | 4     | 3   | 9     | 8     |   |
|     |   |     |       |       |     |     |       |     |       |       |   |
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| 6   |   |     | 7     | 7     |     |     |       |     |       |       |   |
| 3   | 4 | 1   | 1 2   | 6     | 6   | 1 2 | 4 5 6 | 1   | 4 5 6 | 7     |   |
|     | 8 |     | 8 9   | 8 9   |     | 9   |       |     |       |       |   |
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|     |   |     | 7 8 9 | 7 8 9 | 9   |     | 4     | 6   | 4     | 6     |   |

|       |       |     |     |     |   |       |       |     |     |
|-------|-------|-----|-----|-----|---|-------|-------|-----|-----|
| 1     | 3     | 2   | 4   | 5   | 9 | 5     | 6     | 1   | 8   |
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| 1     | 5     | 5   | 6   | 2   | 3 | 4     | 1     | 5   | 1   |
| 7     | 9     | 7   | 9   | 8   |   |       | 7     | 9   | 9   |
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| 7 8   | 7 8   | 7 8 |     | 8 9 |   |       | 7 8 9 | 7   | 9   |
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| 5 6   | 5     | 8   |     |     |   | 8     |       |     |     |
| 8     |       |     |     |     |   |       |       |     |     |
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|       | 6     | 8   |     | 8 9 |   |       | 9     | 9   | 4   |
| 4     | 2     |     | 1   |     | 6 | 2     | 5     | 3   | 2   |
|       | 7 8 9 | 7 8 |     | 8 9 | 8 | 6     |       |     | 7   |

|                 |              |          |                   |                 |                   |              |              |            |
|-----------------|--------------|----------|-------------------|-----------------|-------------------|--------------|--------------|------------|
| 1<br>8          | 3<br>7 9     | 2        | 1<br>4 5<br>7 8   | 1<br>4 5<br>7 8 | 3<br>4 5<br>7 8   | 3<br>6       | 5<br>9       | 4<br>7 9   |
| 4               | 6            | 1<br>8   | 9                 | 1<br>5<br>8     | 3<br>2 3<br>5 7 8 | 2 3<br>7     | 2 3<br>5     | 2<br>7     |
| 3<br>9 7 9      | 3<br>5       | 2<br>4 7 | 4                 | 3<br>6          | 2 3<br>4 7 9      | 8            | 1            |            |
| 2<br>6<br>7 9   | 8            | 4<br>6 9 | 1<br>2 3<br>4 6 4 | 1<br>3<br>4 6 4 | 2 3<br>2 3        | 1 2 3<br>7 9 | 1 2 3<br>6 9 | 5          |
| 2<br>5 6<br>7 9 | 1            | 4<br>6 9 | 2<br>4 5 6<br>8   | 3<br>4 5 6<br>8 | 2 3<br>4 5 8      | 2 3<br>7 8 9 | 2<br>6 9     | 2<br>7 8 9 |
| 2<br>5 6        | 2<br>5       | 3        | 1<br>2 5 6<br>8   | 7               | 9                 | 1 2<br>8     | 4<br>8       | 2<br>8     |
| 1 2 3<br>5 8 9  | 2 3<br>4 5 9 | 1<br>8 9 | 4 5<br>7 8        | 4 5<br>8 9      | 4 5<br>7 8        | 1 2<br>4 8 9 | 1 2<br>9     | 6          |
| 1<br>5 6<br>8 9 | 4 5<br>9     | 1<br>8 9 | 6<br>4 5 6<br>8   | 2<br>4 5<br>8   | 4 5<br>8          | 1<br>4 8 9   | 7            | 3          |
| 2<br>6 4<br>8 9 | 2<br>9       | 7        | 3                 | 4<br>6 8 9      | 1                 | 5            | 2<br>9       | 2<br>4 8 9 |

|              |          |            |                |                |                  |              |            |            |
|--------------|----------|------------|----------------|----------------|------------------|--------------|------------|------------|
| 1<br>5 9     | 3<br>7   | 1<br>3 9   | 1 2 3<br>8     | 1 2 3<br>6     | 4<br>2 5 9       |              |            |            |
| 1<br>8 9     | 6<br>8   | 1<br>4 6   | 1 2<br>4 6     | 1 2<br>7 6     | 5                | 1 2<br>7 8 9 | 1<br>7 9   | 3          |
| 1<br>5 8     | 3<br>2   | 1<br>4 6   | 9              | 1<br>3 6 7     | 1<br>3 4 6 7     | 1<br>7 8     | 1<br>5 7   | 5          |
| 1 2<br>8     | 6<br>8 7 | 1 2<br>6   | 1 2 3<br>5 6 8 | 4              | 9                | 2 3<br>7     | 5<br>7     | 3<br>2 5   |
| 2<br>8 9     | 3        | 2<br>7 9   | 2<br>5 6 8     | 2<br>6 8       | 4                | 5<br>7 9     | 1          |            |
| 4            | 1<br>9   | 5          | 7              | 1 2 3<br>9     | 1 2 3            | 2 3<br>9     | 6          | 8          |
| 7            | 5        | 8          | 1<br>4 6       | 1<br>3 6 9     | 1<br>3 4 6       | 1<br>3 9     | 2          | 4<br>6 9   |
| 1 2 3<br>4 9 | 1<br>4 9 | 1 2 3<br>9 | 1 2 3<br>4 6 8 | 1 2 3<br>6 7 9 | 1 2 3<br>4 6 7 8 | 5            | 1<br>3 7 9 | 4<br>6 7 9 |
| 6            | 1<br>4 9 | 1 2 3<br>9 | 1 2 3<br>4     | 5              | 1 2 3<br>4 7     | 1<br>3 7 9   | 8          | 4<br>7 9   |

|            |                |            |                |              |                |                |            |            |
|------------|----------------|------------|----------------|--------------|----------------|----------------|------------|------------|
| 6          | 1<br>7 9       | 8          | 3              | 1<br>4 7 9   | 2              | 5              | 4<br>7 9   | 1<br>9     |
| 1<br>5 9   | 4              | 1<br>5 9   | 3<br>5 7 9     | 1<br>6 7 9   | 1<br>5 6 7 9   | 1<br>3 9       | 8          | 2          |
| 1<br>5 9   | 2              | 1<br>5 9   | 3<br>4 5 7 8 9 | 1<br>4 7 9   | 1<br>4 5 7 8 9 | 1<br>3 4 6 7 9 | 3<br>1 6 9 | 3<br>1 6 9 |
| 7          | 1<br>5 9       | 2          | 6              | 1<br>4 9     | 1<br>3 4 5 8 9 | 1<br>3 8 9     | 3<br>1 9   | 3<br>1 9   |
| 8          | 1<br>6 9       | 1<br>9     | 2              | 1 2 3<br>7 9 | 1<br>3 7 9     | 1<br>3 6 9     | 5          | 4          |
| 3          | 1<br>5 6 9     | 4          | 5<br>8 9       | 1<br>9       | 1<br>5 8 9     | 1<br>6 8 9     | 2          | 7          |
| 2          | 8              | 7<br>9     | 1              | 5            | 4<br>7 9       | 3<br>4 6 9     | 3<br>4 6 9 | 3<br>6 9   |
| 1<br>4 9   | 1<br>3 7 9     | 1<br>6 7 9 | 6<br>4 7 9     | 8            | 4<br>7 9       | 3<br>2 4 9     | 5          |            |
| 1<br>4 5 9 | 1<br>3 6 5 6 9 | 2<br>4 9   | 2 3<br>4 6 9   | 3<br>4 6 9   | 7              | 1<br>4 6 9     | 3<br>8     |            |

|   |              |        |          |        |        |            |              |              |
|---|--------------|--------|----------|--------|--------|------------|--------------|--------------|
| 1 | 4<br>3       | 2      | 3<br>6   | 9      | 8      | 5          | 7            | 4<br>6       |
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| 7 | 5            | 8      | 1 2<br>9 | 6      | 4      | 1 2 3<br>9 | 1 2 3<br>9   | 1 2<br>9     |
| 3 | 1<br>8       | 6      | 4        | 2      | 9      | 1<br>8     | 5            | 7            |
| 4 | 1 2<br>8 7   | 1      | 5        | 1<br>7 | 3<br>7 | 3<br>6 8 9 | 1 2<br>6 8 9 | 1 2<br>6 8 9 |
| 5 | 1 2<br>9 7 9 | 1      | 8        | 1<br>7 | 6      | 4          | 1 2<br>6     | 3            |

|          |            |            |        |              |              |                |              |              |
|----------|------------|------------|--------|--------------|--------------|----------------|--------------|--------------|
| 4 5      | 8          | 3<br>5 6   | 7      | 1            | 5 6<br>9     | 4              | 2 3<br>4 6 9 | 2 3<br>4 6 9 |
| 5<br>7   | 2          | 3<br>5 6 7 | 4      | 5 6<br>8 9   | 5 6<br>8 9   | 7 8 9          | 1            | 3<br>6 8 9   |
| 1        | 4<br>7     | 6<br>9     | 3      | 6<br>8       | 2            | 4<br>7 8       | 5            | 4<br>6 8     |
| 3        | 5<br>7     | 4          | 6      | 5<br>7 8 9   | 1            | 5<br>8 9 7 8 9 | 2<br>5 8 9   | 2<br>5 8 9   |
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| 2        | 1<br>7     | 5<br>7 8   | 5<br>9 | 3            | 4 5<br>7 8 9 | 6              | 4<br>7 8 9   | 1<br>4 5 8 9 |
| 8        | 9          | 1<br>5     | 1<br>5 | 4            | 6            | 3              | 2            | 4<br>6 7     |
| 4 5<br>7 | 4 5<br>7   | 3<br>2     | 8      | 4 5 6<br>7 9 | 4 5 6<br>7 9 | 1              | 4<br>6 9     | 3<br>4 5 6 9 |
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|                 |          |              |            |   |              |                |                  |                  |
|-----------------|----------|--------------|------------|---|--------------|----------------|------------------|------------------|
| 1<br>5 6<br>8 9 | 3<br>2   | 1<br>4 5 6   | 7          | 4 | 6 4 5 6<br>9 | 3<br>4 5 6 8 9 | 4 5 6<br>4 6 8 9 | 4 5 6<br>4 5 6 8 |
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| 2 3<br>8        | 5        | 2 3<br>7 6   | 1 2<br>4 6 | 9 | 4            | 6              | 4<br>7 8         | 2<br>6 4 6 7 8   |
| 4               | 6<br>8   | 9            | 1 2 3<br>6 | 7 | 3<br>6       | 5 6<br>8       | 1 2<br>8         | 2<br>5 6 8       |
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| 7               | 9        | 2<br>5       | 8          | 4 | 6 4 5 6      | 1              | 3                | 4<br>2 6         |

|              |        |          |               |              |            |        |            |          |                 |            |          |   |
|--------------|--------|----------|---------------|--------------|------------|--------|------------|----------|-----------------|------------|----------|---|
| 1<br>7       | 6<br>9 | 2        | 1<br>4 5<br>7 | 4 5<br>7 8 9 | 4 5<br>8 9 | 5<br>9 | 1<br>8 9   | 3        | 1<br>4 5 6<br>8 |            |          |   |
|              | 6<br>9 | 5 6<br>9 | 4 5           | 1            | 4 5<br>8 9 | 3<br>5 | 2 3<br>9   | 7        | 4<br>8 9        | 4 5 6<br>8 |          |   |
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| 1<br>8       | 3      | 4 5      | 9             | 6            | 4 5        | 7      | 1 2 3<br>8 | 1 2<br>8 | 1<br>8          | 3          |          |   |
| 2 3<br>7 8   |        | 3<br>5   | 2<br>7 8      | 5<br>9       | 3          | 1      | 5<br>9     | 3        | 4               | 6          | 3<br>8 9 |   |
| 5            | 1<br>9 | 3<br>8   | 1 2<br>8 9    | 2 3<br>8 9   | 7          | 6      | 1<br>8 9   | 3<br>4   | 1<br>8 9        | 3<br>4     |          |   |
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|          |              |          |     |          |          |               |          |                 |   |
|----------|--------------|----------|-----|----------|----------|---------------|----------|-----------------|---|
| 6<br>9   | 3<br>6<br>9  | 8        | 7   | 1        | 4 5<br>3 | 5 6           | 2        | 4 5 6<br>9      |   |
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| 8        | 4<br>7       | 5 6      | 9   | 4 5 6    | 2        | 3             | 1        | 4<br>7          | 6 |
| 2<br>5 6 | 2<br>5 6     | 3        | 4 5 | 7        | 1        | 9             | 4<br>8   | 6<br>8          |   |
| 3        | 4 5 6<br>8 9 | 1<br>5 6 | 2   | 4 5<br>9 | 4 5 6    | 1<br>5 6<br>8 | 7        | 5 6<br>8 9      |   |
| 5 6<br>9 | 5 6<br>8 9   | 2        | 1   | 5<br>9   | 7        | 4             | 6<br>8 9 | 3               |   |
| 4<br>7   | 4 5 6<br>7 9 | 1<br>5 6 | 8   | 3        | 4 5 6    | 1<br>5 6      | 6<br>9   | 2               |   |

|                   |            |            |          |          |          |            |                 |                 |          |          |
|-------------------|------------|------------|----------|----------|----------|------------|-----------------|-----------------|----------|----------|
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| 4<br>7            | 6<br>9     | 1<br>7     | 6<br>9   | 4<br>9   | 3        | 5          | 1<br>4          | 6               | 1<br>8 9 | 3        |
| 5 6<br>8          | 5 6<br>8   | 7          | 1        | 9        | 2        | 3          | 5 6<br>7        | 5 6<br>8        | 4        |          |
| 1<br>4 5 6<br>8 9 | 2          | 4 5<br>9   | 3        |          | 6<br>7 8 | 4 5 6<br>7 | 1<br>5 6<br>7 9 | 1<br>5 6<br>8 9 | 1<br>7 8 | 5        |
| 1<br>4 5 6<br>8 9 | 3          | 4 5<br>9   | 4<br>7 8 | 6<br>7 8 | 6<br>7   | 4 5 6<br>7 | 1<br>5 6<br>7 9 | 1<br>5 6<br>7 8 | 2        | 5<br>7 8 |
| 5<br>7 8          | 5<br>7 8   | 6          | 2        | 3        | 1<br>7 8 | 1<br>7     | 5<br>7          | 4               | 9        |          |
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|                   |                 |              |        |          |            |              |              |             |          |                 |
|-------------------|-----------------|--------------|--------|----------|------------|--------------|--------------|-------------|----------|-----------------|
| 9                 | 1 2 3<br>7 8    | 1<br>6       | 3<br>7 | 2 3      | 5          | 1 2 3<br>7 8 | 1 2 3<br>7 8 | 4           | 1 2<br>8 |                 |
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| 1<br>4            | 3<br>8          | 1 2 3<br>7 8 | 5      | 2 3<br>4 | 6          | 1 2 3<br>4   | 1 2 3<br>7 8 | 9           | 1 2<br>8 |                 |
| 2                 | 1<br>4 5 6<br>7 | 3<br>4 5 6   | 1<br>7 | 4<br>9   | 6          | 4 5<br>8 9   | 4<br>9       | 4 5<br>7 8  | 3        | 1<br>5 6<br>8 9 |
| 1<br>4 5 6<br>8 9 | 2               | 4 5<br>9     | 3      | 8        | 2 3<br>4   | 2 3<br>9     | 7            | 1 2<br>4 5  | 1<br>5   | 1 2<br>5 6<br>9 |
| 4 5<br>7          | 3<br>7          | 3<br>4 5     | 3<br>7 | 1<br>9   | 2 3<br>4   | 6            | 2<br>7 8     | 5<br>7 8    | 2<br>8 9 |                 |
| 7                 | 1<br>5<br>8     | 3<br>1       | 3      | 6        | 1 2 3<br>5 | 1 2 3<br>5   | 9            | 1<br>5<br>8 | 4        |                 |
| 1<br>4 5          | 3<br>4 5        | 1<br>4       | 3<br>5 | 2        | 8          | 1<br>4       | 3<br>4 5     | 9           | 1<br>5   | 6<br>7          |
| 1<br>4 5 6<br>8   | 9               | 1<br>4       | 6      | 4 5<br>7 | 1<br>4     | 6            | 4 5<br>7     | 1<br>5<br>8 | 2        | 3               |

|          |            |          |            |            |               |                 |                 |                 |                 |            |
|----------|------------|----------|------------|------------|---------------|-----------------|-----------------|-----------------|-----------------|------------|
| 1 2      | 6          | 5        | 3          | 4          | 1 2<br>5<br>7 | 1 2<br>5<br>7   | 9               | 8               | 1 2 3<br>7      |            |
| 9        | 1 2<br>4   | 7        | 1<br>8     | 3          | 1 2<br>5<br>8 | 2<br>4 5        | 1 2<br>4        | 6               |                 |            |
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| 1 2<br>6 | 1 2<br>9   | 2<br>4   | 6<br>8 9   | 1<br>8 9   | 1 2<br>4<br>8 | 6<br>7 8 9      | 3               | 7               | 2<br>9          | 5          |
| 2<br>7   | 3          | 4        | 2<br>8 9   | 5          | 1<br>4<br>7 8 | 2<br>4<br>7 8 9 | 1               | 6               | 2<br>8          |            |
| 4        | 2<br>7 9   | 2<br>9   | 6<br>7 8 9 | 1<br>7 8 9 | 3<br>7 8      | 1<br>7 8 9      | 1 2 3<br>6<br>8 | 5               | 1 2 3<br>7 8    |            |
| 2<br>7   | 6          | 8        | 2<br>9     | 1<br>7     | 3<br>9        | 1<br>7          | 4 5<br>7 9      | 1 2 3<br>6<br>7 | 1 2 3<br>4<br>7 | 1 2 3<br>7 |
| 3        | 5          | 1        |            | 2          | 4<br>7 8      | 6               | 4<br>8          | 4<br>7          | 9               |            |

|                   |          |              |          |                 |                   |                 |                 |          |            |              |             |
|-------------------|----------|--------------|----------|-----------------|-------------------|-----------------|-----------------|----------|------------|--------------|-------------|
| 1 2 3<br>4 5 8    | 6        | 1 2 3<br>4 5 | 4        | 3<br>9          | 4 5<br>9          | 4 5<br>9        | 4               | 3<br>8 9 | 7          | 1<br>4       | 3<br>9      |
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| 9                 | 5<br>7 8 | 4 5          | 3<br>4   | 6<br>7          | 4 5 6<br>7        | 1               | 4<br>8          | 6<br>8   | 4          | 2            |             |
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| 1 2<br>4          | 1 2<br>7 | 6            | 5        | 1 2<br>4        | 7                 | 3               | 4<br>8 9        | 2<br>4   | 2<br>8 9   | 4<br>7       | 9           |
| 1 2<br>4 5<br>7   | 3        | 8            | 4<br>7   | 6<br>9          | 4<br>7            | 2<br>9          | 4<br>6          | 4<br>5   | 2<br>9     | 4 5 6<br>7 9 |             |
| 1 2<br>5          | 4        | 1 2<br>5     | 9        | 8 9             | 3                 | 7               | 2<br>9          | 6        | 1<br>5     | 9            |             |
| 2 3<br>5 6        | 2<br>5   | 7            | 1        | 2<br>4 5 6<br>9 | 2<br>4 5 6<br>9   | 4               | 2 3<br>9        | 2<br>4 5 | 2<br>9     | 8            |             |
| 1 2 3<br>5 6<br>8 | 1 2<br>5 | 1 2 3<br>5   | 9        | 4<br>8 9        | 6<br>4 5 6<br>8 9 | 2<br>4 5 6<br>9 | 2<br>4 5 6<br>9 | 7        | 1 2<br>4 5 | 1<br>4 5     | 3<br>9      |



|                       |                     |                     |                       |                         |                       |                       |                         |                         |
|-----------------------|---------------------|---------------------|-----------------------|-------------------------|-----------------------|-----------------------|-------------------------|-------------------------|
| <sup>3</sup><br>7     | 6                   | <sup>2</sup><br>7 9 | <sup>1 2</sup><br>9   | <sup>1 2 3</sup><br>5 9 | <sup>2 3</sup><br>5 9 | <sup>5 3</sup><br>5 6 | 4                       | 8                       |
| 1                     | <sup>3</sup><br>9   | 8                   | 4                     | <sup>6 4 5</sup><br>9   | <sup>3</sup><br>5 6 9 | <sup>3</sup><br>5 6   | 7                       | 2                       |
| <sup>3</sup><br>4     | 5                   | <sup>2</sup><br>4   | 7                     | 8                       | <sup>2 3</sup><br>6   | 1                     | <sup>3</sup><br>6 9     | <sup>3</sup><br>6 9     |
| 8                     | <sup>1 2</sup><br>4 | 5                   | <sup>2</sup><br>4     | 6                       | <sup>2 3</sup><br>7   | 9                     | <sup>1 2 3</sup><br>4 7 | <sup>3</sup><br>7       |
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| 9                     | <sup>2</sup><br>4   | 3                   | 8                     | <sup>2</sup><br>4 7     | 1                     | <sup>2</sup><br>4 7   | <sup>2</sup><br>5 6 7   | <sup>4 5 6</sup><br>7   |
| <sup>3</sup><br>4 5 6 | <sup>3</sup><br>9   | 1                   | <sup>2</sup><br>6 9   | <sup>2</sup><br>5 7 9   | 8                     | <sup>2 3</sup><br>4 7 | <sup>2 3</sup><br>5 6 9 | <sup>3</sup><br>4 5 6 9 |
| 2                     | 8                   | <sup>4</sup><br>6 9 | 3                     | <sup>5</sup><br>7 9     | <sup>5 6</sup><br>7 9 | <sup>4</sup><br>6 7   | <sup>5 6</sup><br>9     | 1                       |
| <sup>3</sup><br>5 6   | 7                   | <sup>6</sup><br>9   | <sup>1 2</sup><br>6 9 | <sup>1 2</sup><br>5 9   | 4                     | <sup>2 3</sup><br>6   | 8                       | <sup>3</sup><br>5 6 9   |

|                       |                         |                     |                         |                       |                       |                         |                       |                       |
|-----------------------|-------------------------|---------------------|-------------------------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|
| <sup>1</sup><br>7 9   | 5                       | <sup>1</sup><br>7 9 | 2                       | 4                     | <sup>1</sup><br>7 8 6 | <sup>6</sup><br>8 6 7 8 | <sup>1</sup><br>6 7 8 | 3                     |
| 1                     | 6                       | <sup>3</sup><br>4   | 9                       | <sup>5</sup><br>8     | <sup>3</sup><br>7 8   | <sup>1</sup><br>4 5 8   | 2                     | <sup>1</sup><br>4 7 8 |
| 8                     | <sup>2 3</sup><br>4     | <sup>2 3</sup><br>4 | <sup>2 3</sup><br>7 5 6 | <sup>5</sup><br>7     | <sup>3</sup><br>6     | <sup>1</sup><br>4 5 6 7 | <sup>4 5 6</sup><br>7 | 9                     |
| 4                     | <sup>3</sup><br>7 9     | <sup>3</sup><br>7 9 | 8                       | 1                     | 2                     | <sup>5 6</sup><br>7 5 6 | <sup>5 6</sup><br>7   | <sup>6</sup><br>7 6   |
| <sup>1 2</sup><br>6 9 | <sup>1 2 3</sup><br>9   | 5                   | <sup>4</sup><br>7       | <sup>6 4</sup><br>9 7 | <sup>3</sup><br>8 9   | <sup>1</sup><br>8       | <sup>1 2</sup><br>8   | <sup>8</sup><br>8     |
| <sup>1 2</sup><br>7 9 | <sup>1 2</sup><br>7 9   | 8                   | 3                       | <sup>6</sup><br>9     | 5                     | <sup>4</sup><br>9 7     | <sup>1</sup><br>4 7   | <sup>1 2</sup><br>4 7 |
| <sup>2</sup><br>7 9   | <sup>2</sup><br>4 7 8 9 | 6                   | <sup>4 5</sup><br>7     | <sup>2 3</sup><br>5 8 | <sup>3</sup><br>4 8   | 1                       | <sup>3</sup><br>9 8   | <sup>4</sup><br>8     |
| 3                     | <sup>1</sup><br>4 8     | <sup>1</sup><br>4   | <sup>4</sup><br>6       | 7                     | 9                     | 2                       | <sup>4</sup><br>8 6   | 5                     |
| <sup>2</sup><br>5 9   | <sup>2</sup><br>4 8 9   | <sup>2</sup><br>4   | 1                       | <sup>2 3</sup><br>5 8 | <sup>3</sup><br>4 6 8 | 7                       | <sup>3</sup><br>9 4 8 | <sup>6</sup><br>8     |

|                       |                         |                         |                         |                     |                           |                       |                       |                       |
|-----------------------|-------------------------|-------------------------|-------------------------|---------------------|---------------------------|-----------------------|-----------------------|-----------------------|
| <sup>3</sup><br>7 8 9 | 5                       | <sup>2 3</sup><br>7 8 9 | <sup>2 3</sup><br>8 9   | 1                   | <sup>2 3</sup><br>8 9     | 6                     | <sup>4</sup><br>9 7   | <sup>2</sup><br>4 9   |
| <sup>3</sup><br>9     | 4                       | <sup>2 3</sup><br>6 9   | <sup>2 3</sup><br>5 6 9 | 7                   | <sup>2 3</sup><br>5 6 9   | 8                     | <sup>1</sup><br>5 9   | <sup>1 2</sup><br>5 9 |
| <sup>3</sup><br>7 8 9 | <sup>2 3</sup><br>6 7   | 1                       | 4                       | <sup>3</sup><br>8 9 | <sup>2 3</sup><br>5 6 8 9 | <sup>2 3</sup><br>9   | <sup>3</sup><br>5 7 9 | <sup>2</sup><br>5 9   |
| 5                     | 8                       | <sup>4</sup><br>7 9     | <sup>6</sup><br>9       | <sup>3</sup><br>4 9 | <sup>3</sup><br>7 9       | <sup>2 3</sup><br>4 9 | <sup>1</sup><br>4 6 9 | <sup>1 2</sup><br>6 9 |
| <sup>3</sup><br>4 9   | <sup>2 3</sup><br>6 4 9 | <sup>2 3</sup><br>6 9   | 1                       | 5                   | <sup>4</sup><br>6 9       | 7                     | 8                     | <sup>2</sup><br>4 9   |
| 1                     | <sup>3</sup><br>7 9     | <sup>3</sup><br>4 6 7 9 | <sup>3</sup><br>8 9     | 2                   | <sup>4</sup><br>7 8 9     | <sup>3</sup><br>9     | <sup>4 5 6</sup><br>9 | <sup>4 5</sup><br>9   |
| <sup>3</sup><br>4 7 8 | <sup>3</sup><br>7       | 5                       | <sup>3</sup><br>8 9     | <sup>3</sup><br>8 9 | 1                         | <sup>4</sup><br>9     | 2                     | 6                     |
| 2                     | 1                       | <sup>4</sup><br>8       | 7                       | 6                   | <sup>4</sup><br>8 9       | 5                     | <sup>4</sup><br>9     | 3                     |
| 6                     | 9                       | <sup>4</sup><br>3       | <sup>2</sup><br>5 4     | <sup>3</sup><br>5   | <sup>2</sup><br>5         | 1                     | 7                     | 8                     |

|                       |                       |                       |                         |                         |                       |                         |                       |                       |
|-----------------------|-----------------------|-----------------------|-------------------------|-------------------------|-----------------------|-------------------------|-----------------------|-----------------------|
| 9                     | 5                     | <sup>1</sup><br>4     | <sup>3</sup><br>7 6     | <sup>3</sup><br>8 6 7 8 | <sup>3</sup><br>4 7 8 | <sup>1</sup><br>7 8     | <sup>3</sup><br>6 7 8 | 2                     |
| <sup>2 3</sup><br>8   | <sup>1 2</sup><br>4   | <sup>1</sup><br>4     | 9                       | <sup>2 3</sup><br>5 6 8 | <sup>2</sup><br>7 8   | <sup>3</sup><br>4 7 8   | <sup>1</sup><br>6 7 8 | <sup>5 6</sup><br>7 8 |
| <sup>2 3</sup><br>8   | 7                     | 6                     | <sup>1 2 3</sup><br>5   | <sup>1 2 3</sup><br>5 8 | 4                     | <sup>3</sup><br>8       | 9                     | <sup>5</sup><br>8     |
| <sup>5</sup><br>7     | <sup>4</sup><br>7     | <sup>3</sup><br>8     | <sup>1 2</sup><br>4 5 7 | <sup>1 2</sup><br>4 5   | 6                     | 9                       | <sup>2 3</sup><br>4 7 | <sup>4</sup><br>7     |
| 1                     | <sup>4</sup><br>7     | <sup>3</sup><br>6 7 9 | <sup>2</sup><br>4 7     | <sup>2</sup><br>4 8     | <sup>2</sup><br>7 8 9 | <sup>2 3</sup><br>5 7 8 | <sup>4</sup><br>7 8   | <sup>6</sup><br>7 8   |
| <sup>5 6</sup><br>7   | <sup>4</sup><br>7 9   | <sup>6</sup><br>9     | 2                       | <sup>4 5</sup><br>7     | <sup>4 5</sup><br>8 9 | 3                       | 1                     | <sup>6 4</sup><br>7 8 |
| <sup>6</sup><br>7     | <sup>6</sup><br>8 9   | 5                     | <sup>2</sup><br>4 6 9   | <sup>2</sup><br>4 6 9   | 1                     | <sup>2</sup><br>7 8     | <sup>2</sup><br>7 8   | 3                     |
| 4                     | <sup>6</sup><br>8 7 9 | <sup>2 3</sup><br>6   | <sup>2 3</sup><br>6     | <sup>2</sup><br>9       | 5                     | <sup>2</sup><br>7 8     | 1                     | <sup>3</sup><br>7 8   |
| <sup>2 3</sup><br>2 3 | <sup>1 2</sup><br>1 3 | <sup>1</sup><br>3     | 8                       | 7                       | 5                     | 6                       | 4                     | 9                     |

|                         |                       |                         |                     |                         |                         |                         |                         |                     |
|-------------------------|-----------------------|-------------------------|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------|
| <sup>1 2</sup><br>7 8   | 4                     | 5                       | 6                   | <sup>2 3</sup><br>8     | <sup>1</sup><br>3       | 9                       | <sup>1</sup><br>7 8     | <sup>3</sup><br>7 8 |
| <sup>1 2</sup><br>7 8   | <sup>1 2</sup><br>7 8 | <sup>1 2</sup><br>7 8   | <sup>1</sup><br>7 9 | <sup>2 3</sup><br>5 8 9 | <sup>1</sup><br>4 6 7 8 | <sup>3</sup><br>4 6 7 8 | <sup>3</sup><br>4 6 7 8 | <sup>1</sup><br>3   |
| 9                       | <sup>1</sup><br>7 8   | 3                       | <sup>1</sup><br>7   | 4                       | <sup>1</sup><br>8       | 2                       | <sup>6</sup><br>7 8     | 5                   |
| <sup>1</sup><br>4 5 6 8 | <sup>1</sup><br>8     | <sup>1</sup><br>6 4 8   | 2                   | 9                       | 7                       | <sup>1</sup><br>4 5 6 8 | <sup>3</sup><br>4 5 6 8 | <sup>1</sup><br>3   |
| <sup>2</sup><br>4 5 6 8 | <sup>2</sup><br>8 9   | <sup>2</sup><br>6 4 8 9 | <sup>1</sup><br>5   | <sup>3</sup><br>5 6     | <sup>1</sup><br>5       | 7                       | <sup>4 5 6</sup><br>8 9 | <sup>4</sup><br>8 9 |
| 1                       | <sup>3</sup><br>7 9   | 8                       | <sup>5 6</sup><br>9 | 4                       | <sup>1</sup><br>9       | <sup>5 6</sup><br>9     | 2                       | <sup>3</sup><br>7 8 |
| <sup>1 2</sup><br>4 7   | 5                     | <sup>1 2</sup><br>4 7 9 | 3                   | 8                       | 6                       | <sup>4</sup><br>9 7     | <sup>4</sup><br>7 9     | <sup>4</sup><br>7 9 |
| <sup>2 3</sup><br>4 7   | <sup>2</sup><br>7 9   | <sup>2</sup><br>4 7 9   | <sup>4 5</sup><br>9 | 1                       | <sup>2</sup><br>5 9     | 8                       | <sup>2 3</sup><br>4 5 7 | 6                   |
| <sup>2 3</sup><br>4 8   | <sup>2</sup><br>8 9   | 6                       | <sup>4 5</sup><br>9 | 7                       | <sup>2</sup><br>5 9     | <sup>3</sup><br>4 5 9   | 1                       | <sup>3</sup><br>4 9 |

|                           |                       |                       |                     |                       |                         |                       |                         |                       |
|---------------------------|-----------------------|-----------------------|---------------------|-----------------------|-------------------------|-----------------------|-------------------------|-----------------------|
| <sup>1</sup><br>9         | <sup>3</sup><br>4 5 9 | <sup>3</sup><br>5 9   | 6                   | 7                     | <sup>1 2</sup><br>4 9   | <sup>2</sup><br>8     | <sup>4</sup><br>9       | <sup>3</sup><br>9     |
| <sup>1</sup><br>7 8 9     | <sup>3</sup><br>7 9   | 6                     | <sup>4</sup><br>8   | <sup>8 9</sup><br>8 9 | <sup>1 2</sup><br>5 7 9 | 5                     | <sup>2</sup><br>4 7 9   | <sup>3</sup><br>7 9   |
| <sup>7 8 9</sup><br>7 8 9 | 2                     | <sup>7 9</sup><br>7 9 | <sup>4 5</sup><br>8 | <sup>5</sup><br>8 9   | 3                       | <sup>4</sup><br>7 9   | 6                       | 1                     |
| <sup>3</sup><br>6 9       | 1                     | 4                     | <sup>3</sup><br>8   | <sup>3</sup><br>8 6   | 7                       | <sup>6</sup><br>8 9   | 5                       | 2                     |
| <sup>6</sup><br>7 9       | <sup>6</sup><br>7 9   | 8                     | 1                   | 2                     | 5                       | 3                     | <sup>6</sup><br>7 9     | <sup>4</sup><br>7 9   |
| 2                         | <sup>3</sup><br>7 9   | <sup>5 6</sup><br>7   | <sup>5</sup><br>7   | <sup>3</sup><br>8     | 4                       | <sup>1</sup><br>7 8   | <sup>1</sup><br>7 8     | <sup>6</sup><br>7 8   |
| <sup>1</sup><br>7 9       | <sup>3</sup><br>6 7 9 | 2                     | <sup>5</sup><br>7   | <sup>3</sup><br>5     | <sup>3</sup><br>8 9     | <sup>4</sup><br>8 7 9 | <sup>1</sup><br>4 5 6 8 | <sup>5 6</sup><br>8   |
| 5                         | 8                     | <sup>1</sup><br>7 9   | <sup>2</sup><br>7   | 4                     | 6                       | <sup>1 2</sup><br>7 9 | 3                       | <sup>7 9</sup><br>7 9 |
| 4                         | <sup>3</sup><br>6 7 9 | <sup>3</sup><br>7 9   | <sup>2 3</sup><br>5 | 1                     | <sup>8 9</sup><br>8 9   | <sup>6</sup><br>8 7 9 | <sup>5 6</sup><br>8     | <sup>8</sup><br>8     |

|                 |            |          |              |              |                   |            |
|-----------------|------------|----------|--------------|--------------|-------------------|------------|
| 1 2<br>4 6      | 1 2<br>4 6 | 9        | 1 6<br>8     | 3            | 1 4<br>7          | 5 7 8      |
| 1 4<br>6        | 1 4<br>6   | 8        | 7 5<br>6 9   | 1            | 1 3<br>4 9        | 2          |
| 7               | 5          | 3        | 1 8 9<br>4   | 2            | 1 9<br>8 9        | 6          |
| 2 3<br>5 6<br>8 | 2 4<br>5 6 | 9        | 1 3<br>4 6   | 1 3<br>7 8   | 1 2 3<br>4 5<br>7 | 5 3<br>6 7 |
| 2 3<br>5 6      | 2 3<br>6   | 1        | 4 3<br>6 9   | 3 6<br>7 9   | 8 4 5<br>7 9      | 3 5<br>6 9 |
| 3 6<br>8        | 3 6<br>4 6 | 2        | 1 3<br>7 8 9 | 5            | 1 3<br>4 7        | 3 6<br>9 9 |
| 9               | 2 3<br>5   | 2        | 5 3<br>8     | 6 4          | 2 3<br>5 7        | 1          |
| 1 2 3<br>4 5    | 1 2 3<br>4 | 7        | 1 5<br>9     | 1 2 3<br>8 9 | 1 6<br>8 9        | 3 5<br>6 9 |
| 1 2 3<br>5 6    | 8          | 2 5<br>6 | 1 5<br>9     | 1 2 3<br>7 9 | 1 2 3<br>5 9      | 4          |

|          |          |          |            |            |                |
|----------|----------|----------|------------|------------|----------------|
| 9        | 5 6<br>7 | 5 6<br>7 | 2 8<br>3   | 4 1 2<br>7 | 1 7            |
| 4 8<br>9 | 4 8<br>9 | 4 3<br>9 | 6 2<br>7   | 1 2<br>7   | 9 5            |
| 1        | 2        | 7        | 4          | 5          | 9 3 6 8        |
| 5        | 4 8<br>6 | 1 4<br>6 | 1 4<br>7   | 2          | 9 3 4<br>7 8 7 |
| 4 2<br>8 | 4 8<br>9 | 1 2<br>4 | 3 1<br>4 9 | 5          | 6 4<br>7 8     |
| 4 3<br>9 | 7 4<br>9 | 3 8<br>9 | 4 6<br>9   | 1          | 5 2            |
| 2 4<br>7 | 3 4<br>9 | 2 5<br>9 | 5 6<br>8   | 2 1 2<br>7 | 1 7 9          |
| 2 6<br>9 | 5 5<br>9 | 2 5<br>9 | 1 2<br>9   | 1 2 3<br>7 | 7 8 4 3<br>6 9 |
| 2 6<br>7 | 1 8      | 9        | 2 3<br>4   | 5          | 2 3<br>7 6     |

|            |              |            |                |              |              |            |
|------------|--------------|------------|----------------|--------------|--------------|------------|
| 4          | 2 1<br>9 6   | 3 5<br>9   | 8              | 1 5 6<br>7 9 | 3 2 3<br>5 6 | 2 5 6<br>9 |
| 1 6<br>8   | 7 1 3<br>8 6 | 1 5<br>9   | 1 3<br>5 6     | 2            | 5 3<br>8 9   | 4          |
| 6 8<br>9   | 5            | 4          | 3 6<br>7 9     | 6            | 1 2<br>8 9   | 1          |
| 9          | 1 5<br>7 8   | 1 1<br>7 8 | 1 2 3<br>5     | 1 2 3<br>5   | 4 6<br>7 8   | 1 2<br>5 8 |
| 1 5 6<br>7 | 3 2          | 1 5<br>9   | 1 5 6<br>9     | 8            | 1 4 5<br>7 9 | 1 5<br>9   |
| 1 5 6<br>8 | 1 5 6<br>9   | 4 7        | 1 2 1<br>5 6 9 | 5 6<br>9     | 1 2<br>5 8   | 3          |
| 3 8        | 1 6          | 2 2<br>9 7 | 2 2<br>9 7     | 1 4 5<br>9   | 4 5 6<br>8   | 1 5 6      |
| 1 5 6<br>7 | 1 5 6<br>7   | 1 6        | 8 4 3          | 2 9          | 1 6          | 1          |
| 2          | 4            | 9          | 6 1 5<br>5     | 3 3<br>8 8   | 7            | 7          |

|                   |              |              |              |              |              |
|-------------------|--------------|--------------|--------------|--------------|--------------|
| 1 2<br>5 8<br>9   | 3 1 5<br>8 9 | 4 2<br>8 9   | 2 2<br>5 9   | 6 1 5<br>9   | 7            |
| 1 5<br>8 9        | 7 1 5<br>8 9 | 3 3<br>6 8   | 3 5 6<br>9   | 1 3<br>8 9   | 2 4          |
| 2 5<br>8 9        | 6 4<br>8     | 3 2 3<br>6 7 | 1 6<br>8 9   | 3 5<br>9     | 5 8 9        |
| 1 2<br>4 5<br>7 8 | 9 1 5<br>7 8 | 4 6 4<br>7 8 | 2 2<br>6 7   | 1 2<br>4 5   | 3            |
| 2 3<br>4 5<br>7   | 2 6<br>7     | 3 5 6<br>7 9 | 1 6<br>7 9   | 2 8<br>9     | 5 6<br>9     |
| 1 2 3<br>4 8      | 2 6<br>8     | 1 6<br>8     | 3 4<br>6 8 9 | 5 2 3<br>6 9 | 7 1 4<br>9 6 |
| 6                 | 1 2          | 5 3<br>7 9   | 4 3<br>8 9   | 3 8<br>7 9   | 8 9          |
| 7 9               | 5 3          | 2 7<br>9     | 8 7<br>9     | 4 6          | 1            |
| 7 8 9             | 4 7 8 9      | 1 7 9        | 3 6<br>7 9   | 3 5<br>7 9   | 2            |

|            |              |              |              |              |              |
|------------|--------------|--------------|--------------|--------------|--------------|
| 1 7        | 2 4 6<br>7   | 1 4 6<br>9   | 5 8          | 7 4<br>7 9   | 3            |
| 1 3<br>7 8 | 4 6 4<br>7 8 | 1 2 3<br>4 7 | 2 1 6<br>7 9 | 2 5<br>7 8 9 | 1 2<br>7 8 9 |
| 9          | 4 5<br>7 8   | 5            | 1 2 3<br>4 7 | 6            | 1 2<br>7 8   |
| 2          | 1 3<br>7 8   | 3 4 5 6<br>8 | 9 4 6        | 5 3<br>7 8   | 7 8          |
| 3 8<br>9   | 5 6<br>8     | 7 2 3<br>8 6 | 2 3<br>5     | 1 5<br>8 9   | 4            |
| 4          | 5 7 8 9      | 3 5<br>8     | 1 5          | 2 3<br>5     | 6 2<br>7 8 9 |
| 5          | 3 1          | 6 4<br>8 9   | 7 6<br>9     | 2 7 9        | 2            |
| 6          | 4 7 8        | 2 8 9 7 8    | 1 7 9        | 4 7 8 9      | 3 5          |
| 7 8        | 9 4 7 8      | 2 3 5        | 2 3 5        | 4 7 8        | 1 6          |

|                 |                 |               |                   |                 |          |            |               |            |
|-----------------|-----------------|---------------|-------------------|-----------------|----------|------------|---------------|------------|
| 8               | 1<br>7 6<br>9   | 2             | 1 3<br>5 6<br>7 9 | 3<br>5 6<br>9   | 4        | 1<br>7 9   | 6<br>7 9      | 5          |
| 1<br>7 6<br>9   | 1<br>7 4<br>9   | 6<br>6 4<br>9 | 8                 | 5 6<br>9 7      | 1<br>9   | 3          | 2<br>6<br>7 9 | 2<br>5     |
| 3               | 1<br>7 6<br>9   | 5             | 1<br>7 6<br>9     | 6<br>9          | 2        | 1<br>7 8 9 | 4             | 7 8        |
| 4               | 5               | 1             | 2 3<br>6<br>7 9   | 2 3<br>6<br>9 7 | 3<br>9   | 2<br>7 8   | 2 3<br>7 8    | 2 3<br>7 8 |
| 2<br>9          | 8               | 3<br>9        | 2 3<br>7          | 1               | 5        | 4          | 2 3<br>7      | 6          |
| 2<br>6          | 2 3<br>6        | 7             | 2 3               | 4               | 8        | 5          | 1             | 9          |
| 1 2<br>5<br>7 9 | 1 2 3<br>7 9    | 3<br>8 9      | 4                 | 2 3<br>5<br>8 9 | 1 3<br>9 | 6          | 2 3<br>7 9    | 2 3<br>7   |
| 2<br>5 6<br>9   | 2 3<br>4 6<br>9 | 4 6           | 2 3<br>5<br>9     | 7               | 3<br>9   | 2<br>8 9   | 2 3<br>8 9    | 1          |
| 1 2<br>7 9      | 1 2 3<br>7 9    | 3<br>8 9      | 1 2 3<br>9        | 2 3<br>8 9      | 6        | 2<br>7 9   | 5             | 4          |

|   |   |   |   |   |   |                               |   |
|---|---|---|---|---|---|-------------------------------|---|
| 1   | <sup>4</sup> <sub>7 8</sub>                           | <sup>4</sup> <sub>7</sub> <sup>6</sup> <sub>9</sub>   | <sup>4</sup> <sub>7</sub> <sup>3 6</sup> <sub>9</sub>                                 | 2   | <sup>3</sup> <sub>7</sub> <sup>6</sup> <sub>9</sub>                               | 5                             | <sup>4</sup> <sub>8 9</sub> <sup>3</sup> <sub>4</sub> <sup>6</sup> <sub>7 8 9</sub> |
| 3   | <sup>4 5</sup> <sub>7</sub>                           | 2   | 8   | <sup>4 5 6</sup> <sub>7</sub> <sup>5 6</sup> <sub>7 9</sub>   | <sup>4</sup> <sub>7</sub> <sup>6</sup> <sub>9</sub>                               | 1                             | <sup>4</sup> <sub>7</sub> <sup>6</sup> <sub>9</sub>                                 |
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| <sup>2</sup> <sub>4 5</sub>                           | 9   | <sup>4 5</sup> <sub>4 5</sub>                         | <sup>1 2 3</sup> <sub>6</sub> <sup>1</sup> <sub>3</sub> <sup>2 3</sup> <sub>6</sub>   | 8   | 7   | <sup>1</sup> <sub>4 5 6</sub> |   |
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| <sup>4 5</sup> <sub>7</sub>                           | 2   | 3   | <sup>1</sup> <sub>4 7</sub>   | 9   | <sup>5</sup> <sub>7 8</sub>   | 6                             | <sup>1</sup> <sub>4 5</sub> <sup>7</sup> <sub>8</sub>                               |
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| 8   | 6   | 1   | <sup>4</sup> <sub>7</sub> <sup>3</sup> <sub>4 5</sub> <sup>3</sup> <sub>7</sub>       | <sup>5</sup> <sub>7</sub>                                     | <sup>3</sup> <sub>4</sub>   | 2                             | <sup>4 5</sup> <sub>7</sub> <sup>9</sup> <sub>9</sub>                               |

|   |   |   |   |   |   |   |                             |
|---|---|---|---|---|---|---|-----------------------------|
| <sup>2</sup> <sub>4</sub> <sup>7</sup> <sub>8</sub>       | <sup>4</sup> <sub>5</sub> <sup>2</sup> <sub>9</sub>   | <sup>4</sup> <sub>8</sub> <sup>6</sup> <sub>9</sub> <sup>4 5 6</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>8</sub>   | <sup>4</sup> <sub>5</sub> <sup>3</sup> <sub>4</sub> <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>4</sub> <sup>5</sup> <sub>8</sub>   | 1   |                             |
| 6   | <sup>4 5</sup> <sub>8 9</sub> <sup>4 5</sup> <sub>9</sub>   | 1   | <sup>4 5</sup> <sub>8 9</sub>   | 3   | 2   | <sup>4 5</sup> <sub>7 8</sub> <sup>5</sup> <sub>7 8</sub> |                             |
| <sup>1</sup> <sub>4</sub> <sup>3</sup> <sub>8</sub>       | <sup>3</sup> <sub>4</sub> <sup>1</sup> <sub>5</sub> <sup>3</sup> <sub>8</sub>                           | 7   | <sup>4 5</sup> <sub>8</sub>   | 2   | 6   | 9   | <sup>5</sup> <sub>8</sub>   |
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|   |   |   |   |   |   |                                   |                               |
|---|---|---|---|---|---|-----------------------------------|-------------------------------|
| <sup>5</sup> <sub>7 8</sub>   | <sup>5</sup> <sub>7</sub>                               | 9   | 6   | <sup>4</sup> <sub>7</sub> <sup>3</sup> <sub>4 5</sub> <sup>3</sup> <sub>4 5</sub>           | 1 | 2                                 | <sup>4 5</sup> <sub>7 8</sub> |
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| 4   | 2   | 3   | 1   | <sup>5</sup> <sub>7 8</sub> <sup>8</sup> <sub>8</sub>                                       | 6 | <sup>5</sup> <sub>7</sub>         | 9                             |
| <sup>3</sup> <sub>5 6</sub> <sup>9</sup> <sub>9</sub>                           | 8   | <sup>4 5</sup> <sub>4 5</sub>   | <sup>2 3</sup> <sub>4</sub> <sup>2 3</sup> <sub>6</sub> <sup>4</sup> <sub>5</sub> <sup>4 5 6</sup> <sub>7</sub> <sup>4 5 6</sup> <sub>7</sub> | <sup>1</sup> <sub>4</sub> <sup>2 3</sup> <sub>4 5</sub> <sup>3</sup> <sub>4 5 6</sub>       |   |                                   | <sup>3</sup> <sub>4 5 6</sub> |
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| <sup>3</sup> <sub>5 6</sub> <sup>4</sup> <sub>5</sub> <sup>3</sup> <sub>9</sub> | 1   | <sup>2 3</sup> <sub>4</sub> <sup>2 3</sup> <sub>4</sub> <sup>2 3</sup> <sub>6</sub> <sup>7</sup> <sub>8</sub> | 7   | <sup>2</sup> <sub>4 5</sub> <sup>4 5 6</sup> <sub>4 5 6</sub> <sup>3</sup> <sub>4 5 6</sub> |   |                                   |                               |
| <sup>5</sup> <sub>7 8</sub>   | 9   | <sup>4 5</sup> <sub>7 8</sub> <sup>4</sup> <sub>6</sub> <sup>4 5 6</sup> <sub>8</sub>                         | 3   | 1   | 2 |                                   |                               |
| <sup>2 3</sup> <sub>5</sub> <sup>8</sup> <sub>8</sub>                           | <sup>4 5</sup> <sub>4 5</sub> <sup>3</sup> <sub>8</sub> | <sup>2 3</sup> <sub>4 5</sub> <sup>8</sup> <sub>8</sub>   | 9   | 1   | 7 | <sup>4 5 6</sup> <sub>4 5 6</sub> |                               |
| <sup>2 3</sup> <sub>5</sub>   | 1   | 6   | <sup>2 3</sup> <sub>4 5</sub> <sup>2 3</sup> <sub>4</sub> <sup>2 3</sup> <sub>4 5</sub>   | 9   | 8 | <sup>4 5</sup> <sub>4 5</sub>     |                               |

|   |   |   |   |   |   |   |                               |
|---|---|---|---|---|---|---|-------------------------------|
| <sup>1</sup> <sub>5</sub> <sup>1</sup> <sub>8</sub>   | <sup>5</sup> <sub>8</sub>                             | 2   | 9   | <sup>1</sup> <sub>3</sub>   | 7   | <sup>4</sup> <sub>7</sub> <sup>6</sup> <sub>5</sub> <sup>3</sup> <sub>8</sub>         |                               |
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|   |   |   |   |   |   |  |  |
|---|---|---|---|---|---|--|--|
| <sup>1</sup> <sub>4 5</sub>   | <sup>1 2</sup> <sub>4</sub> <sup>1 2</sup> <sub>5</sub>                               | 3   | <sup>2</sup> <sub>4 5 6</sub> <sup>4</sup> <sub>6</sub> <sup>6</sup> <sub>8</sub>                         | <sup>1 2</sup> <sub>4 5</sub> <sup>7</sup> <sub>8</sub> <sup>9</sup> <sub>9</sub>                                 |   |  |  |
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|   |   |   |   |   |   |                               |                           |
|---|---|---|---|---|---|-------------------------------|---------------------------|
| <sup>6</sup> <sub>8</sub> <sup>5 6</sup> <sub>7 8</sub>                       | <sup>7</sup> <sub>8</sub> <sup>9</sup> <sub>9</sub>                               | 2   | <sup>5</sup> <sub>7</sub>   | 3   | <sup>4 5 6</sup> <sub>7 9</sub> <sup>4 5</sup> <sub>7</sub> <sup>9</sup> <sub>9</sub> | 1                             |                           |
| <sup>4</sup> <sub>7</sub> <sup>1 2</sup> <sub>5 6</sub>                       | <sup>2</sup> <sub>7</sub> <sup>9</sup> <sub>9</sub>                               | 4   | <sup>1</sup> <sub>5 6</sub> <sup>1</sup> <sub>7</sub>                                   | 8   | <sup>3</sup> <sub>7</sub> <sup>5</sup> <sub>7 9</sub> <sup>5 6</sup> <sub>9</sub>     |                               |                           |
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| 7   | 9   | <sup>2 3</sup> <sub>4</sub> <sup>8</sup> <sub>8</sub>   | <sup>1</sup> <sub>4 5</sub> <sup>3</sup> <sub>5 8</sub> <sup>1 2 3</sup> <sub>8</sub>   | <sup>1</sup> <sub>4</sub> <sup>5</sup> <sub>8</sub>                                 | 6   | <sup>4 5</sup> <sub>4 5</sub> | <sup>3</sup> <sub>9</sub> |
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| 9   | <sup>2 3</sup> <sub>4</sub> <sup>2 3</sup> <sub>7</sub>                           | <sup>1</sup> <sub>7</sub> <sup>3</sup> <sub>6</sub>   | <sup>6</sup> <sub>5</sub>   | <sup>1</sup> <sub>4</sub> <sup>8</sup> <sub>4</sub>                                 | 8   | <sup>3</sup> <sub>4</sub>     |                           |

|                 |               |            |             |             |          |        |          |            |            |              |               |
|-----------------|---------------|------------|-------------|-------------|----------|--------|----------|------------|------------|--------------|---------------|
| 4               | 3<br>6        | 4 5 6      | 4 5 6       | 3<br>5      | 2 3<br>5 | 2<br>7 | 6        | 9          | 1 2 3<br>7 | 8            | 1 2<br>4<br>7 |
| 4               | 3<br>6<br>8 9 | 1          | 4 5 6<br>8  | 3<br>5      | 2 3<br>5 | 2<br>7 | 6        | 5 6<br>7   | 2 3<br>7   | 2<br>9       | 2<br>4<br>7   |
|                 | 3<br>9        | 7          | 2           | 4           | 8        | 1      | 5        | 6          |            | 3<br>9       |               |
| 1 2 3<br>7      | 2<br>6        | 1<br>7     | 3<br>6      | 9           | 5        | 8      | 1 2<br>7 | 4          | 1 2<br>7   |              |               |
| 5               | 4<br>8 9      | 6<br>7 8   | 4<br>6      | 1<br>7      |          | 3      | 2        | 1<br>7 8 9 | 1<br>9     | 1<br>7 8     |               |
| 1 2<br>7 8      | 2<br>8 9      | 1<br>7 8   |             | 1<br>7      |          | 4      | 6        | 4          | 6          | 1 2<br>7 8 9 | 3<br>5        |
| 1 2<br>7 8      | 3             | 5<br>7 8   | 6           | 9           | 5        | 7      | 4        | 1 2<br>5   | 1 2<br>8   |              |               |
| 1 2<br>4<br>7 8 | 4 5<br>8      | 9          | 2<br>5<br>8 | 2<br>4<br>7 |          | 3      | 1 2<br>8 | 1 2<br>5   |            | 6            |               |
| 4<br>8          | 2<br>6        | 4 5 6<br>8 | 4 5 6<br>8  | 2<br>5<br>8 |          | 1      | 4 5      |            | 3<br>9     | 7            | 3<br>9        |

|   |               |             |               |               |             |                 |            |             |                   |          |          |
|---|---------------|-------------|---------------|---------------|-------------|-----------------|------------|-------------|-------------------|----------|----------|
| 1 | 2 3<br>6      | 4           | 3<br>6        | 2<br>4 5 6    | 2<br>6<br>9 | 2<br>5 6        | 7          | 2 3<br>6    | 2 3<br>4 5<br>8 9 |          |          |
| 8 | 2<br>7        | 6<br>4<br>7 | 6             | 3             | 2<br>6<br>7 | 2<br>5 6<br>9   | 4 5 6<br>9 | 2<br>6<br>9 |                   | 1        |          |
| 9 | 2 3<br>6      | 5           | 1 2<br>4<br>7 | 6             | 8           | 1 2<br>6        | 4          | 2 3<br>6    | 2 3<br>6          | 2 3<br>4 |          |
| 2 | 1<br>5 6<br>8 |             | 6             | 1<br>5 6<br>8 | 7           | 1<br>5 6<br>8 9 |            | 1<br>3<br>9 | 4                 |          | 3<br>8 9 |
| 3 | 1<br>7 8      | 5<br>7      | 1<br>7        | 1 2<br>5<br>8 | 4           | 1 2<br>5<br>8 9 |            | 1 2<br>9    | 2<br>7 8 9        | 6        |          |
|   | 1<br>4<br>7 8 | 6<br>7      | 9             | 1 2<br>8      | 6           | 1 2<br>6        | 3          | 1 2<br>7    | 5                 | 2<br>7 8 |          |
| 5 | 1<br>7        | 3<br>9      | 1<br>7        | 3             | 1 2<br>6    | 1 2 3<br>6      | 4          | 8           | 2 3<br>6<br>7     | 2 3<br>9 |          |
| 6 | 4<br>7        |             | 8             | 9             | 2 3<br>7    | 2               | 4 5        | 2 3<br>1    | 4 5<br>7          | 2 3<br>9 |          |
|   | 1<br>4<br>7   | 3<br>9      | 2             | 1<br>7 8      | 6           | 5               | 1<br>7 8   | 6           | 3<br>6<br>9       | 4<br>7   | 3<br>9   |

|          |            |            |          |            |          |            |          |     |              |          |          |
|----------|------------|------------|----------|------------|----------|------------|----------|-----|--------------|----------|----------|
| 8        | 1 2 3<br>6 | 1 2<br>5 6 | 9        | 1<br>7     | 3<br>5 6 |            | 3<br>6   | 7   | 5 6<br>7     | 2<br>5 6 | 4        |
| 9        |            | 3<br>6     | 5 6      | 5<br>7 8   | 3        | 2          | 4        | 1   | 5 6<br>8     | 7        | 3<br>6   |
| 7        | 4          | 1 2<br>5 6 | 1<br>5   | 3<br>8     | 1<br>5 6 |            | 3<br>8   |     | 3<br>5 6     | 2<br>5 6 | 9        |
| 2<br>6   | 2<br>7 8   | 6          | 9        | 2 3<br>7 8 |          | 3<br>7 8   | 2 3<br>6 | 4   | 1            | 5        |          |
| 1 2<br>4 | 5          | 1 2<br>4   | 8        | 1 2<br>8   | 1<br>4   |            | 9        |     | 3<br>6       | 7        | 3<br>6   |
| 1<br>4   | 6          | 1<br>7     | 6        | 3          | 1<br>5   | 1<br>4 5 6 |          | 2   | 9            | 8        |          |
|          | 3          | 1 2<br>6   | 1 2<br>7 | 6          | 4        |            | 7 8 9    | 7 8 | 5 6<br>7 8 9 | 5 6<br>8 | 1 2<br>6 |
| 1 2<br>4 | 6          | 9          | 1 2<br>4 | 6          | 2        |            |          | 5   | 7 8          | 3        | 1 2<br>6 |
|          | 3          | 2          | 2        |            | 6        |            | 3        | 1   | 5<br>9       | 4        | 2<br>7   |

|        |        |        |            |          |            |          |            |            |            |            |               |   |
|--------|--------|--------|------------|----------|------------|----------|------------|------------|------------|------------|---------------|---|
| 4      |        | 6<br>9 | 8          |          | 6<br>7     | 1<br>5 6 | 1<br>7     | 1<br>7     | 3<br>5 6   | 1<br>5 6   | 3<br>9        | 2 |
| 5      |        | 2<br>7 | 6<br>9     | 6<br>9   | 4<br>7 8   | 2<br>6   | 1 2<br>7 8 | 3          | 1<br>7     | 6<br>9     | 1<br>6<br>4   |   |
| 3      |        | 2<br>7 | 6          | 1        | 9          | 2<br>7   | 5 6<br>4   | 8          | 5 6<br>7   | 4 5<br>7   |               |   |
| 2<br>6 | 1<br>9 |        | 7          | 4<br>8   | 6          | 3        | 4 5<br>8   | 1 2<br>5 6 | 1 2<br>5 6 | 1<br>8 9   | 5<br>8        |   |
| 2<br>6 | 8      | 3      | 1          |          | 6<br>9     | 5        |            | 2<br>6     | 4          | 5<br>7     |               |   |
|        | 1<br>6 |        | 5          | 4<br>7 8 | 6<br>7 8 9 | 2        |            | 1<br>7     | 3<br>6     | 1<br>7 8 9 | 1<br>6<br>7 8 | 3 |
| 8      | 3      | 2      | 5          | 4        | 6          | 1<br>7   |            |            | 1<br>7     |            | 9             |   |
| 1      | 5      | 4      | 2 3<br>7 8 | 2<br>7 8 | 9          |          |            | 2 3<br>8   | 2 3<br>9   |            | 6             |   |
| 7      |        | 6<br>9 |            | 6<br>9   | 8          | 2 3<br>8 | 1 2<br>8   | 1<br>8     | 4          | 2 3<br>5   | 3<br>8        |   |

|               |                 |        |       |            |          |        |          |               |          |          |  |
|---------------|-----------------|--------|-------|------------|----------|--------|----------|---------------|----------|----------|--|
|               | 5<br>7          | 8      | 9     | 2<br>6     | 1        | 2<br>6 | 4 5<br>7 | 3             | 4<br>7   |          |  |
| 1<br>7        | 5<br>7          |        | 4     | 3          |          | 9      | 2<br>7 8 | 2<br>7 8      | 5<br>7 8 | 6        |  |
| 3             | 6               | 2      | 4 5   | 4 5<br>7 8 | 5<br>7 8 | 9      | 1        |               | 7 8      |          |  |
| 2<br>7 8      | 9               |        | 4 5 6 | 4 5 6      | 5 6      | 3      | 2<br>7 8 | 1             |          |          |  |
| 1 2<br>4<br>7 | 1 2 3<br>4<br>7 | 6      | 8     | 9          | 1<br>4 5 | 3      | 2<br>7   | 2<br>4 5      | 2<br>7   |          |  |
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|        |             |               |                 |          |            |             |             |          |             |             |        |
|--------|-------------|---------------|-----------------|----------|------------|-------------|-------------|----------|-------------|-------------|--------|
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|                 |             |                |             |          |               |                      |                 |
|-----------------|-------------|----------------|-------------|----------|---------------|----------------------|-----------------|
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| 4 8 9  | 1 7 3    | 6 2 5    |                       |             |             |                   |             |
| 5 6    | 1 3      | 2<br>5 6 | 2<br>5 6              | 8           | 9           | 4 7               |             |
| 5 6    | 7 2      | 4 5 6    | 4 5 6                 | 9           | 3 1 8       |                   |             |
| 7      | 4 5      | 8        | 9                     | 1<br>3      | 6           | 1 2<br>5          | 3<br>5<br>4 |
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| 2 9    | 4 6      | 8        | 1<br>3                | 5           | 1<br>7      | 3<br>6<br>4       | 1<br>3      |

|                 |                 |               |               |               |                 |                 |               |          |
|-----------------|-----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|----------|
| 2 3<br>4 5<br>9 | 4               | 3<br>7        | 5<br>8 9      | 2<br>5<br>8 9 | 3<br>5<br>8 9   | 6               | 1 2<br>4<br>8 | 1 2<br>4 |
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|-----------------|-----------------|-----------------|---------------|---------------|-----------------|----------------------|------------------------|--|
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|               |            |               |                 |                 |               |            |               |              |
|---------------|------------|---------------|-----------------|-----------------|---------------|------------|---------------|--------------|
| 2<br>4 5<br>8 | 1 2 3<br>4 | 1 3<br>5<br>8 | 2 3<br>4 6<br>8 | 2 3<br>4 6<br>9 | 2<br>4 6<br>8 | 1 3<br>8 9 | 7             | 1 2 3<br>4 5 |
| 2<br>4 7      | 2 3<br>4   | 6             | 5               | 2 3<br>4        | 1<br>9        | 8 9<br>8 9 | 2 3<br>4      |              |
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| 9 8 2         | 1 3        | 7             | 5 6             | 4               | 1 3<br>5      | 1 3<br>6   | 1 3<br>6      |              |
| 5             | 6 4        | 9             | 1 3<br>2 5      | 2               | 1 3<br>7      | 1 2 3<br>5 | 8             |              |
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|            |            |              |          |            |             |                 |               |               |
|------------|------------|--------------|----------|------------|-------------|-----------------|---------------|---------------|
| 5          | 2<br>4 7   | 6<br>7 9     | 4<br>9   | 7          | 6<br>8      | 2<br>7 9        | 4<br>6<br>9   | 1 3           |
| 2 3<br>4 6 | 1          | 3<br>9       | 3<br>5 6 | 3<br>6     | 2<br>5<br>9 | 7               | 4 5 6<br>8    | 2<br>5 6<br>8 |
| 8          | 2 3<br>7   | 6<br>7 9     | 3        | 4          | 1 3<br>6    | 1 2<br>5<br>7 9 | 5 6<br>9      | 5 6           |
| 2 3<br>6   | 2 3<br>5 6 | 1 3          | 8        | 1<br>7     | 1<br>6      | 1 2 3<br>5 6    | 9 4           |               |
| 4<br>7     | 6<br>7     | 4 5 6<br>7 8 | 4<br>7 8 | 9          | 2 3         | 1<br>5 6<br>8   | 5 6<br>8      | 5 6           |
| 9          | 2 3<br>5 6 | 1 3<br>8     | 1        | 5 6        | 4           | 1<br>5 6<br>8   | 2<br>5 6<br>8 | 7             |
| 1          | 7 8        | 6            | 1 2<br>7 | 5 4        | 2<br>8      | 3 9             |               |               |
| 1 3<br>4 7 | 3<br>7 8 9 | 2            | 1 3<br>7 | 1 3<br>7 9 | 6           | 4 5<br>8        | 4 5<br>7 8    | 5<br>8        |
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|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
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| 9                 | 5                 | <sup>3</sup><br>7 | <sup>3</sup><br>4 | <sup>2</sup><br>8 | <sup>2</sup><br>7 | <sup>3</sup><br>4 | 1                 | <sup>2</sup><br>3 |
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| <sup>4</sup><br>7 | <sup>6</sup><br>7 | 1                 | <sup>4</sup><br>7 | <sup>3</sup><br>5 | <sup>2</sup><br>7 | <sup>3</sup><br>4 | <sup>2</sup><br>9 | 8                 |

|                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
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| 4                 | 2                 | 6                 | <sup>1</sup><br>7 | <sup>5</sup><br>8 | <sup>5</sup><br>7 | <sup>1</sup><br>5 | 9                 | <sup>5</sup><br>7 |
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|     |     |     |     |   |     |   |   |     |   |
|-----|-----|-----|-----|---|-----|---|---|-----|---|
| 7   | 6   | 4 5 | 2   | 1 | 5   | 9 | 2 | 1 2 | 3 |
| 1   | 9   | 2 3 | 3   | 4 | 2 3 | 6 | 2 | 7   | 5 |
| 8   | 2 3 | 4 5 | 1   | 7 | 2 3 | 9 | 6 | 1   | 4 |
| 5 6 | 2 3 | 2 3 | 4   | 8 | 1   | 7 | 2 | 5   | 6 |
| 4   | 8   | 1   | 5 6 | 2 | 7   | 3 | 1 | 5   | 6 |
| 5 6 | 7   | 1 2 | 5 6 | 5 | 3   | 6 | 2 | 1 2 | 8 |
| 3   | 4   | 7   | 2   | 6 | 5   | 1 | 2 | 2   |   |
| 2   | 5   | 8   | 1   | 1 | 4   | 6 | 3 | 7   |   |
| 9   | 1   | 6   | 7   | 3 | 2   | 5 | 4 | 2   | 4 |

|     |     |       |     |     |       |   |       |       |   |
|-----|-----|-------|-----|-----|-------|---|-------|-------|---|
| 1 2 | 2 3 | 1 2 3 | 1   | 1   | 1     | 3 | 6     | 3     | 1 |
| 7 8 | 7 8 | 8     | 8   | 4   | 7 8 9 | 7 | 7 8 9 | 7 8 9 | 5 |
| 9   | 3   | 1     | 3   | 6   | 1     | 1 | 2     | 3     | 4 |
| 6   | 4   | 5     | 1 2 | 1 2 | 1     | 3 | 1     | 3     | 1 |
| 4   | 1   | 6     | 4   | 5   | 2     | 4 | 4     | 8     | 3 |
| 4 5 | 5   | 3     | 3   | 9   | 1     | 6 | 7     | 4     | 2 |
| 2   | 2   | 2     | 4   | 3   | 8     | 1 | 6     | 1     | 5 |
| 2   | 2   | 2     | 5   | 5   | 2     | 6 | 4     | 6     | 3 |
| 1 2 | 2   | 2     | 1 2 | 3   | 7     | 3 | 1     | 2     | 6 |
| 3   | 2   | 1 2   | 1 2 | 1 2 | 9     | 5 | 4     | 2     | 6 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 1 | 3 | 2 | 3 | 6 | 1 | 2 | 2 | 3 |
| 2 | 5 | 3 | 3 | 4 | 8 | 9 | 7 | 9 | 1 |
| 1 | 3 | 1 | 3 | 1 | 3 | 2 | 3 | 2 | 3 |
| 1 | 3 | 1 | 3 | 2 | 8 | 3 | 5 | 4 | 3 |
| 4 | 3 | 6 | 3 | 2 | 5 | 1 | 4 | 3 | 7 |
| 5 | 4 | 3 | 3 | 1 | 2 | 8 | 4 | 3 | 6 |
| 1 | 1 | 1 | 2 | 1 | 3 | 6 | 2 | 5 | 8 |
| 9 | 1 | 3 | 1 | 3 | 6 | 4 | 1 | 5 | 4 |
| 1 | 3 | 2 | 5 | 1 | 1 | 4 | 1 | 3 | 3 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 2 | 5 | 5 | 1 | 1 | 1 | 2 | 3 | 2 |
| 1 | 2 | 8 | 3 | 3 | 5 | 4 | 2 | 3 | 6 |
| 4 | 5 | 5 | 3 | 6 | 7 | 8 | 9 | 7 | 1 |
| 5 | 3 | 1 | 1 | 4 | 1 | 2 | 3 | 1 | 3 |
| 2 | 6 | 4 | 1 | 3 | 1 | 3 | 1 | 1 | 3 |
| 3 | 1 | 1 | 1 | 2 | 3 | 6 | 1 | 2 | 5 |
| 6 | 1 | 1 | 1 | 2 | 3 | 8 | 1 | 1 | 3 |
| 5 | 1 | 4 | 5 | 1 | 3 | 6 | 1 | 1 | 3 |
| 5 | 3 | 1 | 5 | 1 | 5 | 4 | 1 | 5 | 6 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 1 | 1 | 3 | 1 | 2 | 4 | 5 | 4 |   |
| 5 | 4 | 5 | 5 | 6 | 5 | 6 | 1 | 2 |   |
| 1 | 2 | 1 | 3 | 4 | 1 | 5 | 5 | 6 | 6 |
| 7 | 5 | 2 | 6 | 1 | 3 | 4 | 1 | 3 | 3 |
| 3 | 1 | 6 | 4 | 5 | 1 | 5 | 6 | 2 | 7 |
| 2 | 8 | 6 | 1 | 5 | 6 | 4 | 3 | 3 | 3 |
| 1 | 1 | 3 | 1 | 4 | 3 | 2 | 3 | 1 | 5 |
| 4 | 1 | 3 | 1 | 2 | 2 | 3 | 3 | 1 | 5 |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 1 | 3 | 5 | 1 | 2 | 3 | 3 |   |
| 7 | 8 | 7 | 9 | 6 | 8 | 6 | 7 | 8 | 9 |
| 5 | 2 | 3 | 3 | 3 | 4 | 6 | 4 | 6 | 1 |
| 1 | 5 | 2 | 3 | 1 | 5 | 3 | 4 | 3 | 6 |
| 1 | 5 | 1 | 1 | 4 | 3 | 6 | 2 | 6 | 7 |
| 3 | 6 | 2 | 5 | 5 | 1 | 4 | 1 | 5 | 8 |
| 4 | 7 | 8 | 4 | 2 | 6 | 5 | 5 | 6 | 3 |
| 2 | 1 | 5 | 6 | 8 | 5 | 6 | 3 | 3 | 4 |
| 4 | 6 | 3 | 3 | 1 | 2 | 3 | 1 | 2 | 6 |
| 4 | 9 | 8 | 1 | 2 | 3 | 7 | 1 | 2 | 6 |

|                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1 <sup>5</sup> <sub>9</sub> | 3                           | 6                           | 4 <sup>5</sup> <sub>9</sub> | 2 <sup>1</sup> <sub>5</sub> | 1 <sup>5</sup> <sub>8</sub> | <sup>7</sup> 8 <sub>9</sub> | 1 <sup>7</sup> <sub>9</sub> |
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|                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
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|                             |                             |                             |                             |                             |                             |                             |                             |
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|                             |                             |                             |                             |                             |                             |                             |                             |
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|     |     |       |       |     |         |     |     |     |
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| 3   | 7   | 5     | 6     | 4   | 1 2     | 1 2 | 2   | 1   |
| 6   | 8   | 9     | 1 2 3 | 4 5 | 3 1 2 3 | 1 2 | 2 3 | 1 3 |
| 1   | 2   | 1     | 3     | 8   | 3       | 6   | 5   | 3   |
| 1 2 | 1 3 | 1 2 3 | 2 3   | 3   | 5       | 1 2 | 2 3 | 1 3 |
| 4 5 | 6   | 4     | 2 3   | 1   | 2 3     | 4 5 | 8   | 4 5 |
| 1 2 | 1 3 | 1 2 3 | 4     | 3   | 2 3     | 1 2 | 2 3 | 1 3 |
| 1   | 5   | 9     | 8     | 1   | 3       | 5   | 4   | 5 6 |
| 1 2 | 1   | 1 2   | 1     | 5   | 4 5 6   | 4   | 6   | 3   |
| 4 5 | 4 5 | 4     | 6     | 5   | 4 5 6   | 7   | 1   | 2   |

|       |       |       |     |     |     |       |       |     |
|-------|-------|-------|-----|-----|-----|-------|-------|-----|
| 2 3   | 6     | 2 3   | 1   | 8   | 4   | 2 3   | 9     | 2 3 |
| 1     | 3     | 9     | 8   | 2 3 | 3   | 2     | 4     | 1 3 |
| 1 2 3 | 1 2 3 | 4     | 5   | 3   | 9   | 1 2 3 | 1 2 3 | 8   |
| 7     | 1 2 3 | 1 2 3 | 8   | 3   | 1 2 | 2 3   | 2 3   | 4   |
| 8     | 4     | 1 2 3 | 2 3 | 3   | 1 2 | 2 3   | 2 3   | 2 3 |
| 9     | 2 3   | 6     | 4   | 5   | 7   | 2 3   | 8     | 1   |
| 6     | 2 3   | 2 3   |     | 1   | 5   | 8     | 4     | 2 3 |
| 4     | 8     | 1     | 5   | 6   | 2   | 3     | 7     | 1   |
| 1 2 3 | 1 2 3 | 1 2 3 |     | 4   | 8   | 1 2 3 | 1 2 3 | 6   |

|     |       |     |   |   |     |   |   |   |
|-----|-------|-----|---|---|-----|---|---|---|
| 8   | 4 5 6 | 4 5 | 3 | 2 | 2   | 2 | 2 | 1 |
| 9   | 4 5 6 | 2   | 1 | 4 | 1   | 3 | 5 | 6 |
| 1   | 3     | 7   | 5 | 6 | 2   | 2 | 2 | 4 |
| 3   | 7     | 9   | 8 |   | 9   | 4 | 6 | 5 |
| 4 5 | 4 5   | 1   | 7 | 2 | 5   | 6 | 2 | 3 |
| 2   | 4 5   | 6   | 1 | 3 | 1   | 3 | 1 |   |
| 4 5 | 2     | 4 5 | 4 | 6 | 1   | 5 | 6 | 7 |
| 6   | 1     | 3   | 9 | 8 | 7   | 5 | 4 | 2 |
| 7   | 2     | 4 5 | 4 | 6 | 4 5 | 5 | 6 | 8 |

|       |     |     |       |     |       |     |   |       |
|-------|-----|-----|-------|-----|-------|-----|---|-------|
| 3     | 7   | 1   | 6     | 4 5 | 4     | 4 5 | 2 | 4 5   |
|       | 6   | 9   | 1 2 3 | 2 3 | 1 2 3 | 4 5 | 3 | 4 5   |
| 4 5   | 2   | 4 5 | 3     | 8   | 3     | 1   | 6 | 3     |
| 1 2   | 1 3 | 2 3 | 2 3   | 2 3 | 5     | 4   | 1 | 3     |
| 4 5 6 | 9   | 2 3 | 2 3   | 1   | 2 3   | 2   | 8 | 4 5 6 |
| 1 2   | 1 3 | 2 3 | 2 3   | 4   | 2 3   | 2 3 | 1 | 3     |
| 5 6   | 8   | 7   | 6     | 7   | 9     | 8   | 9 | 7     |
| 4     | 5   | 8   | 2 3   | 6   | 4     | 7   | 9 | 1     |
| 1 2   | 1   | 2   | 1 2   | 2   | 1 2   | 3   | 5 | 6     |
| 4     | 6   | 4   | 6     | 4   | 6     | 8   | 9 | 8     |

|   |     |   |   |     |     |     |     |       |
|---|-----|---|---|-----|-----|-----|-----|-------|
| 2 | 1   | 3 |   | 1   | 9   | 4 5 | 1   | 1     |
| 1 | 4   | 5 | 7 | 2   | 3   | 4   | 2   | 8     |
| 1 | 1   |   | 5 | 1 2 | 4   | 2 3 | 6   | 1 2 3 |
| 9 | 4   | 1 | 2 | 2   | 2   | 2 3 | 2 3 | 2 3   |
|   | 2   | 2 | 3 | 4   | 1   | 5   | 5   | 6     |
| 5 | 3   | 4 | 9 | 2   | 1 2 | 2   | 8   | 1 2   |
| 1 | 1 2 | 4 | 6 | 3   | 2   | 5 6 | 8   | 5     |
| 3 | 2   | 2 | 1 | 2   | 7   | 6   | 5   | 4     |
| 4 | 6   | 5 | 7 | 4   | 6   | 9   | 1   | 2 3   |

|   |     |     |   |     |   |     |     |   |
|---|-----|-----|---|-----|---|-----|-----|---|
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| 1 | 6   | 3   | 7 | 5 6 | 6 | 1 2 | 4   | 2 |
| 4 | 1   | 5 6 | 2 | 5 6 | 9 | 3   | 1   | 7 |
| 1 | 6   | 6   | 4 | 5   | 9 | 2 3 | 1 2 | 3 |
| 3 | 1 2 | 2   | 8 | 7   | 4 | 5   | 1   | 9 |
| 5 | 9   | 8   | 6 | 1   |   | 7   | 2 3 |   |
|   | 2 3 | 2 3 | 4 | 2   | 7 | 6   | 3   | 1 |
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| 6 | 5 6 | 1   | 9 | 3   |   | 2   | 4 5 | 8 |

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|                  |                      |                        |                              |                    |                      |                              |
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|                |                |   |                          |                    |                  |                |                |
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| 9              | 3              | 5 | 8                        | <sub>2 6 4 6</sub> | 1                | 7              | <sub>4 2</sub> |

|                       |                       |                       |                  |                  |               |                    |               |                       |
|-----------------------|-----------------------|-----------------------|------------------|------------------|---------------|--------------------|---------------|-----------------------|
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| 2<br>5<br>8           | 5<br>8                | 6                     | 1 2<br>5<br>7    | 2<br>4<br>5<br>7 | 1 2<br>4      | 3                  | 1<br>7        | 9                     |
| 1<br>7                | 4                     | 1<br>7                | 3<br>9           | 8                | 3<br>9        | 5                  | 2             | 6                     |
| 1<br>4<br>7<br>8<br>9 | 3<br>6<br>7<br>8<br>9 | 1<br>4<br>5<br>6<br>7 | 2<br>7<br>8<br>9 | 2 3<br>7<br>9    | 5             | 1 2<br>4<br>8<br>6 | 1<br>7<br>8   | 1<br>4<br>3<br>7<br>8 |
| 4 5 6<br>7 8          | 2                     | 4 5<br>7              | 3<br>7<br>8      | 1                | 6<br>8        | 4<br>8<br>6        | 9             | 4<br>7<br>8<br>3      |
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| 4 5 6<br>9            | 5 6<br>9              | 4 5<br>9              | 1<br>8           | 4 5<br>9         | 7             | 1<br>8             | 3             | 2                     |

|            |        |            |            |                   |               |            |             |             |                 |
|------------|--------|------------|------------|-------------------|---------------|------------|-------------|-------------|-----------------|
| 4 5 6      | 8      | 4 5 6      | 3<br>7     | 2 3<br>6<br>7     | 2 3<br>6<br>7 | 2 3<br>6   | 1           | 5<br>7      | 9               |
| 9          | 7      | 1 3        | 1 3        | 5                 | 4             | 2<br>6     | 2<br>8<br>6 | 2<br>8<br>6 |                 |
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| 4 5 6      | 4      | 3<br>4 5 6 | 4          | 2 3<br>4 6        | 8             | 7          | 2 3<br>5 6  | 9           | 1               |
| 1<br>7 8   | 6      | 9          | 7 8        | 6                 | 2 3<br>6      | 1 2 3<br>6 | 5           | 2 3<br>6    | 2 3<br>6<br>4   |
| 2          | 5      | 9          | 1 3<br>7 8 | 6                 | 4             | 1 3<br>6   | 3<br>7      | 3<br>8<br>6 | 6<br>7 8        |
| 4 6<br>7 8 | 4 6    | 4 6<br>7 8 | 4 6<br>7 8 | 2 3<br>5 6<br>7 8 | 2 3<br>6      | 9          | 7           | 2 3<br>5 6  | 1<br>7 8        |
| 3          | 1<br>6 | 1<br>7 8   | 6          | 2<br>5 6<br>7 8   | 2<br>6        | 2<br>6     | 9           | 4           | 2<br>5 6<br>7 8 |

|             |             |             |                       |                  |                  |                       |                            |                            |
|-------------|-------------|-------------|-----------------------|------------------|------------------|-----------------------|----------------------------|----------------------------|
| 1<br>4<br>5 | 6           | 1<br>4<br>5 | 8<br>9                | 7                | 2 3<br>9         | 1<br>5<br>8           | 1 2 3<br>5<br>8            | 1 2 3<br>5<br>8<br>9       |
| 2           | 3<br>7<br>9 | 1<br>5      | 6<br>8<br>9           | 4                | 3<br>6<br>9      | 1<br>5<br>6<br>7<br>8 | 1<br>3<br>5<br>6<br>7<br>8 | 1<br>3<br>5<br>6<br>8<br>9 |
| 3<br>7<br>9 | 3<br>7<br>9 | 8           | 5                     | 2 3<br>6<br>9    | 1                | 4                     | 2 3<br>6                   | 2 3<br>6                   |
| 4<br>9      | 8           | 2           | 4<br>7<br>9           | 1                | 4<br>7<br>9      | 5 6                   | 5 6                        | 5<br>3                     |
| 5 6<br>9    | 1           | 5<br>9      | 3                     | 8                | 5 6<br>9         | 2                     | 4                          | 7                          |
| 4 5 6<br>4  | 3<br>4      | 3<br>7      | 4<br>6                | 2<br>6           | 2<br>4<br>5<br>6 | 9                     | 1<br>8                     | 1<br>8                     |
| 1<br>4<br>7 | 2           | 3           | 1<br>4<br>7           | 5                | 8                | 1<br>7                | 9                          | 6                          |
| 8           | 4<br>7<br>9 | 1<br>4<br>9 | 1<br>4<br>6<br>7<br>9 | 6<br>4<br>7<br>9 | 6<br>4<br>7<br>9 | 3                     | 2<br>5                     | 2<br>5                     |
| 1<br>7<br>9 | 5           | 6           | 2                     | 3<br>9<br>7      | 3<br>9           | 1<br>7<br>8           | 1<br>7<br>8                | 4                          |

|               |                       |               |               |               |                   |                 |                 |                 |
|---------------|-----------------------|---------------|---------------|---------------|-------------------|-----------------|-----------------|-----------------|
| 4<br>8 9      | 6<br>7 9              | 1             | 5<br>8 9      | 3             | 4<br>8 9          | 4 5<br>7 9      | 2               | 4 5<br>7 9      |
| 2 3<br>4      | 2<br>4                | 2 3<br>9      | 2<br>5<br>8 9 | 7             | 2<br>4<br>8 9     | 6               | 1<br>4 5<br>8   | 1 3<br>4 5<br>9 |
| 2 3<br>4      | 5                     | 2 3<br>7 8 9  | 6             | 2<br>8 9      | 1                 | 3<br>7 9        | 4<br>7 8        | 3<br>7 9        |
| 7             | 1 2<br>6<br>9         | 2<br>5 6<br>9 | 1 2<br>8 9    | 4             | 2<br>8 9          | 2<br>5<br>9     | 3               | 5 6<br>9        |
| 2 3<br>6<br>9 | 2<br>6<br>9           | 4             | 3<br>7        | 2<br>9        | 5                 | 1<br>7          | 6               | 8               |
| 1 2 3<br>9    | 8                     | 2 3<br>5<br>9 | 3<br>7        | 1 2<br>9      | 6                 | 2<br>4 5<br>7 9 | 4 5<br>7 9      | 4 5<br>7 9      |
| 1<br>4<br>7   | 1<br>4<br>6<br>7<br>9 | 6<br>7<br>9   | 1<br>9        | 1<br>5 6<br>9 | 3                 | 8               | 1<br>4 5 6<br>7 | 2               |
| 1 2<br>4      | 6<br>8 9              | 3             | 2<br>8 9      | 1 2<br>8 9    | 1 2<br>5 6<br>8 9 | 7               | 4 5<br>4 5 6    | 1<br>4 5 6      |
| 5             | 1 2<br>7              | 2<br>6<br>7 8 | 4             | 1 2<br>8      | 2<br>8            | 3<br>7          | 9               | 1 3<br>6<br>7   |

|            |            |              |            |            |                   |          |          |     |
|------------|------------|--------------|------------|------------|-------------------|----------|----------|-----|
| 1 2 3<br>6 | 1 2 3<br>5 | 1 2 3<br>5 6 | 8          | 4 2 3<br>7 | 1 2 3<br>4 5<br>7 | 4 5<br>7 | 4 6      | 9   |
| 7          | 4          | 5 3          | 5 3<br>9   | 6          | 5 3<br>9          | 8        | 1        | 2   |
| 8 9        | 8 9        | 1 2<br>5 6   | 1 5<br>7   | 4 2<br>7   | 1 2<br>4 5<br>7   | 4 5<br>7 | 3        | 6 7 |
| 2 3<br>6   | 2 3<br>7   | 8            | 4          | 1          | 3 6<br>7 9        | 5        | 3 6<br>7 | 9   |
| 1 3<br>4 6 | 1 3<br>7   | 9            | 2          | 5          | 3 1<br>6 4<br>7   | 4 6      | 8        | 9   |
| 1 3<br>4 6 | 1 3<br>5 7 | 1 3<br>4 5 6 | 3 6<br>7 9 | 8          | 3 1<br>6 4<br>7 9 | 2        | 3 6<br>7 | 9   |
| 1 2 3<br>4 | 1 2 3      | 7            | 1 3<br>4   | 2 3<br>8   | 6                 | 9        | 5        | 9   |
| 8 9        | 6          | 1 3          | 1 5<br>7   | 3 1<br>7 9 | 3 5<br>7          | 2        | 7 8      | 4   |
| 5          | 8 9        | 4 2          | 7 6<br>7   | 2 4<br>7 9 | 2 6<br>7          | 3        | 7 8      | 1   |

|          |                 |            |              |          |               |                 |                 |            |
|----------|-----------------|------------|--------------|----------|---------------|-----------------|-----------------|------------|
| 1<br>4 5 | 1 2<br>5        | 1 2<br>9   | 4 5<br>7 9   | 3        | 4<br>7 9      | 2<br>8          | 2<br>7 8        | 6          |
| 7        | 3               | 6<br>9     | 8            | 2        | 6<br>9        | 4 5             | 4 5             | 1          |
| 4 5 6    | 2<br>5 6        | 8          | 4 5<br>7     | 1        | 4<br>7 6      | 9               | 2 3<br>7        | 3<br>7     |
| 1<br>5 6 | 1<br>5 6<br>7 8 | 4          | 2            | 6<br>7 9 | 1<br>7 8 9    | 1 3<br>5 6<br>8 | 1 3<br>5 8<br>9 | 3<br>5 8 9 |
| 9        | 1<br>7 8 6      | 3          | 4<br>7       | 5        | 1<br>4<br>7 8 | 1 2<br>4 8 6    | 1 2<br>4 8      | 4<br>8     |
| 2        | 1<br>5 6<br>8   | 1<br>6     | 3            | 6<br>9 4 | 8 9           | 7               | 1<br>4 5<br>8 9 | 4 5<br>8 9 |
| 3        | 9               | 1<br>5 6   | 1<br>6       | 4        | 2             | 1<br>5 8        | 1<br>5 7 8      | 5<br>7 8   |
| 1<br>6   | 1 2<br>6        | 1 2<br>7 6 | 1<br>6 7     | 8        | 5             | 4<br>3          | 3<br>4 9        | 3<br>4 9   |
| 8        | 4               | 1<br>7 5   | 1<br>7 9 7 9 | 3        | 1<br>5        | 6               | 2               |            |

|                             |                             |                               |                                 |                                 |                               |   |                             |                                 |
|-----------------------------|-----------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---|-----------------------------|---------------------------------|
| 3                           | 8                           | 9                             | <sup>2</sup> <sub>7</sub> 4 5 6 | <sup>4</sup> <sub>7</sub> 5 6   | <sup>4</sup> <sub>7</sub> 5 6 | <sup>2</sup> <sub>7</sub> 5                         | 1                           | <sup>6</sup> <sub>7</sub> 4 5 6 |
| <sup>1</sup> <sub>7</sub> 5 | 6                           | 4                             | <sup>3</sup> <sub>7</sub> 5     | 9                               | <sup>1</sup> <sub>7</sub> 5   |   | 2                           | <sup>3</sup> <sub>5</sub> 8     |
| <sup>1</sup> <sub>7</sub> 5 | <sup>5</sup> <sub>7</sub>   | 2                             | <sup>3</sup> <sub>7</sub> 4 5 6 | <sup>1</sup> <sub>7</sub> 4 5 6 | <sup>3</sup> <sub>7</sub> 5   | <sup>1</sup> <sub>7</sub> 8                         | 9                           | <sup>3</sup> <sub>7</sub> 4 5 6 |
| 4                           | 1                           | <sup>3</sup> <sub>7</sub> 5 6 | <sup>2</sup> <sub>8</sub>       | <sup>5</sup> <sub>7</sub> 6     | <sup>2</sup> <sub>8</sub>     |   | 9                           | <sup>3</sup> <sub>7</sub> 6 5 6 |
| <sup>5</sup> <sub>7</sub> 6 | <sup>3</sup> <sub>7</sub> 5 | 8                             | <sup>3</sup> <sub>7</sub> 4 5 6 | <sup>1</sup> <sub>7</sub> 4 5 6 | <sup>3</sup> <sub>7</sub> 9   | <sup>4</sup> <sub>7</sub> 5                         | <sup>3</sup> <sub>7</sub> 1 | <sup>3</sup> <sub>6</sub> 2     |
| 9                           | 2                           | <sup>3</sup> <sub>7</sub> 5 6 | <sup>3</sup> <sub>7</sub> 4 5 6 | <sup>1</sup> <sub>7</sub> 4 5 6 | <sup>3</sup> <sub>7</sub> 1   | <sup>1</sup> <sub>7</sub> 5                         | <sup>3</sup> <sub>7</sub> 4 | 8                               |
| <sup>6</sup> <sub>8</sub>   | 4                           | 1                             | 9                               | 2                               | 3                             | <sup>6</sup> <sub>8</sub>                           | 5                           | 7                               |
| 2                           | 9                           | <sup>5</sup> <sub>7</sub>     | <sup>5</sup> <sub>7</sub>       | 8                               | 6                             | <sup>4</sup> <sub>8</sub> <sup>3</sup> <sub>4</sub> | <sup>3</sup> <sub>4</sub>   | 1                               |
| <sup>5</sup> <sub>7</sub> 6 | <sup>3</sup> <sub>7</sub> 5 | <sup>3</sup> <sub>7</sub> 5 6 | 1                               | <sup>5</sup> <sub>7</sub>       | 4                             | <sup>6</sup> <sub>8</sub>                           | 2                           | 9                               |

|                               |                             |                               |                               |                             |                             |                             |                               |                               |
|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|
| 1                             | <sup>5</sup> <sub>7</sub>   | <sup>3</sup> <sub>9</sub>     | <sup>2</sup> <sub>7</sub> 6 4 | <sup>2</sup> <sub>7</sub> 3 | <sup>3</sup> <sub>7</sub> 6 | <sup>4</sup> <sub>7</sub> 3 | <sup>3</sup> <sub>7</sub> 5 6 | 8                             |
| <sup>2</sup> <sub>7</sub> 3   | 4                           | <sup>2</sup> <sub>7</sub> 3   | <sup>6</sup> <sub>7</sub> 8   | <sup>3</sup> <sub>8</sub>   | 9                           | 1                           | <sup>3</sup> <sub>7</sub> 5 6 | <sup>3</sup> <sub>7</sub> 6   |
| <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>7</sub> 8 | 6                             | <sup>4</sup> <sub>7</sub> 8   | 1                           | 5                           | 9                           | 2                             | <sup>3</sup> <sub>7</sub>     |
| <sup>2</sup> <sub>4</sub>     | <sup>2</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>7</sub> 8 9 | <sup>2</sup> <sub>7</sub> 8   | <sup>5</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>8</sub> 9 | <sup>3</sup> <sub>8</sub>   | <sup>2</sup> <sub>7</sub> 8   | <sup>6</sup> <sub>7</sub> 8 9 |
| <sup>3</sup> <sub>7</sub> 9   | 1                           | <sup>3</sup> <sub>7</sub> 8   | <sup>8</sup> <sub>9</sub>     | 6                           | 2                           | <sup>3</sup> <sub>7</sub> 8 | 4                             | 5                             |
| <sup>2</sup> <sub>5</sub> 3   | 6                           | <sup>2</sup> <sub>5</sub> 8   | 1                             | 7                           | 4                           | <sup>2</sup> <sub>8</sub> 3 | <sup>3</sup> <sub>8</sub> 9   | <sup>2</sup> <sub>3</sub>     |
| 8                             | 2                           | <sup>4</sup> <sub>7</sub> 5   | <sup>4</sup> <sub>7</sub> 5 6 | <sup>4</sup> <sub>7</sub> 5 | 1                           | <sup>3</sup> <sub>4</sub> 6 | <sup>3</sup> <sub>7</sub> 6   | <sup>3</sup> <sub>4</sub> 6   |
| <sup>4</sup> <sub>7</sub> 5 6 | <sup>5</sup> <sub>7</sub> 9 | 1                             | 3                             | <sup>4</sup> <sub>7</sub> 5 | <sup>6</sup> <sub>7</sub>   | <sup>4</sup> <sub>7</sub> 6 | <sup>6</sup> <sub>7</sub> 8   | <sup>2</sup> <sub>4</sub> 6   |
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|                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>4</sub> 7 | 8                           | <sup>4</sup> <sub>5</sub> 9 | 3                           | <sup>2</sup> <sub>4</sub> 7 | <sup>2</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>2</sub> 7 | <sup>1</sup> <sub>2</sub> 5 | <sup>1</sup> <sub>2</sub> 9 |
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| 6                           | <sup>5</sup> <sub>7</sub> 9 | <sup>5</sup> <sub>9</sub>   | <sup>3</sup> <sub>7</sub> 8 | <sup>2</sup> <sub>7</sub> 9 | 1                           | <sup>2</sup> <sub>3</sub> 5 | <sup>2</sup> <sub>3</sub> 5 | 4                           |
| <sup>2</sup> <sub>3</sub> 8 | <sup>2</sup> <sub>6</sub> 9 | 7                           | <sup>1</sup> <sub>8</sub> 3 | <sup>1</sup> <sub>8</sub> 6 | 4                           | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3 |
| 5                           | <sup>2</sup> <sub>9</sub>   | <sup>3</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>7</sub> 8 | <sup>1</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>8</sub>   | <sup>1</sup> <sub>2</sub> 3 | 4                           | 6                           |
| <sup>3</sup> <sub>4</sub> 8 | 1                           | <sup>3</sup> <sub>4</sub> 6 | 2                           | <sup>3</sup> <sub>8</sub> 6 | 9                           | <sup>3</sup> <sub>5</sub> 8 | 7                           | <sup>3</sup> <sub>5</sub> 8 |
| <sup>2</sup> <sub>4</sub> 9 | <sup>2</sup> <sub>4</sub> 6 | <sup>4</sup> <sub>6</sub> 9 | <sup>1</sup> <sub>6</sub> 9 | <sup>5</sup> <sub>6</sub>   | <sup>2</sup> <sub>3</sub> 6 | <sup>1</sup> <sub>2</sub> 3 | 8                           | 7                           |
| <sup>2</sup> <sub>4</sub> 8 | 3                           | <sup>4</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>8</sub> 6 | <sup>1</sup> <sub>2</sub> 8 | 7                           | <sup>1</sup> <sub>2</sub> 3 | 9                           | <sup>1</sup> <sub>2</sub> 5 |
| <sup>2</sup> <sub>7</sub> 8 | <sup>2</sup> <sub>5</sub> 6 | 1                           | 4                           | <sup>2</sup> <sub>3</sub> 8 | <sup>2</sup> <sub>3</sub> 6 | <sup>2</sup> <sub>3</sub> 5 | <sup>2</sup> <sub>3</sub> 5 | <sup>2</sup> <sub>3</sub> 5 |

|                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>7</sub> 6 | 4                           | <sup>5</sup> <sub>7</sub> 6 | <sup>1</sup> <sub>7</sub> 6 | <sup>1</sup> <sub>7</sub> 9 | 2                           | <sup>5</sup> <sub>9</sub>   | 3                           | <sup>6</sup> <sub>8</sub>   |
| 3                           | <sup>1</sup> <sub>5</sub> 9 | 2                           | <sup>1</sup> <sub>8</sub> 6 | <sup>1</sup> <sub>9</sub> 8 | <sup>5</sup> <sub>6</sub> 8 | 7                           | <sup>4</sup> <sub>8</sub> 6 | <sup>4</sup> <sub>8</sub> 6 |
| 8                           | <sup>5</sup> <sub>7</sub> 9 | <sup>5</sup> <sub>6</sub> 7 | 3                           | <sup>4</sup> <sub>7</sub> 6 | <sup>4</sup> <sub>5</sub> 6 | <sup>5</sup> <sub>9</sub>   | 2                           | 1                           |
| 5                           | <sup>7</sup> <sub>8</sub>   | <sup>4</sup> <sub>7</sub> 6 | 2                           | 3                           | <sup>4</sup> <sub>7</sub> 6 | 1                           | <sup>4</sup> <sub>7</sub> 6 | 9                           |
| <sup>4</sup> <sub>7</sub> 6 | 2                           | 9                           | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 6 | <sup>1</sup> <sub>4</sub> 6 | <sup>4</sup> <sub>8</sub>   | 5                           | 3                           |
| <sup>4</sup> <sub>7</sub> 6 | 3                           | 1                           | <sup>4</sup> <sub>7</sub> 6 | 5                           | 9                           | <sup>2</sup> <sub>4</sub> 8 | <sup>4</sup> <sub>7</sub> 8 | <sup>2</sup> <sub>6</sub> 7 |
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| 2                           | 6                           | <sup>4</sup> <sub>7</sub>   | <sup>1</sup> <sub>4</sub> 7 | 8                           | <sup>1</sup> <sub>4</sub> 7 | 3                           | 9                           | 5                           |
| <sup>1</sup> <sub>4</sub> 7 | <sup>1</sup> <sub>5</sub> 8 | <sup>3</sup> <sub>4</sub> 5 | 9                           | <sup>2</sup> <sub>4</sub> 7 | <sup>3</sup> <sub>4</sub> 7 | 6                           | <sup>1</sup> <sub>4</sub> 7 | <sup>2</sup> <sub>4</sub> 8 |

|                             |                             |                           |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 6                           | <sup>4</sup> <sub>7</sub> 5 | 2                         | <sup>4</sup> <sub>7</sub> 8 | <sup>4</sup> <sub>8</sub>   | 9                           | <sup>5</sup> <sub>7</sub>   | 3                           | 1                           |
| 8                           | <sup>3</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>7</sub> 3 | <sup>1</sup> <sub>2</sub> 6 | <sup>2</sup> <sub>7</sub> 3 | <sup>5</sup> <sub>7</sub> 6 | <sup>2</sup> <sub>5</sub> 6 | 4                           |
| <sup>1</sup> <sub>3</sub> 4 | <sup>3</sup> <sub>7</sub>   | 9                         | 5                           | <sup>1</sup> <sub>4</sub> 6 | <sup>2</sup> <sub>7</sub> 3 | <sup>6</sup> <sub>7</sub>   | <sup>2</sup> <sub>6</sub>   | 8                           |
| <sup>1</sup> <sub>2</sub> 7 | <sup>2</sup> <sub>7</sub>   | <sup>1</sup> <sub>7</sub> | <sup>3</sup> <sub>8</sub>   | 9                           | <sup>3</sup> <sub>8</sub>   | 4                           | <sup>5</sup> <sub>6</sub> 5 | <sup>5</sup> <sub>6</sub> 6 |
| 9                           | 8                           | 3                         | 6                           | 5                           | 4                           | 1                           | 7                           | 2                           |
| 4                           | 6                           | 5                         | 2                           | 7                           | 1                           | <sup>8</sup> <sub>9</sub>   | <sup>8</sup> <sub>9</sub>   | 3                           |
| 5                           | 1                           | 8                         | 9                           | 3                           | 6                           | 2                           | 4                           | 7                           |
| <sup>2</sup> <sub>3</sub> 9 | <sup>2</sup> <sub>3</sub> 4 | <sup>6</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> 7 | <sup>1</sup> <sub>2</sub> 8 | <sup>2</sup> <sub>7</sub> 8 | <sup>3</sup> <sub>8</sub> 5 | <sup>5</sup> <sub>6</sub> 8 | <sup>5</sup> <sub>6</sub> 9 |
| 7                           | <sup>2</sup> <sub>3</sub> 9 | <sup>4</sup> <sub>6</sub> | <sup>4</sup> <sub>8</sub>   | <sup>2</sup> <sub>4</sub> 8 | <sup>2</sup> <sub>5</sub> 8 | <sup>3</sup> <sub>5</sub> 6 | 1                           | <sup>5</sup> <sub>6</sub> 9 |

|                             |                             |                             |                             |                             |                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>7</sub> 3 | <sup>2</sup> <sub>5</sub> 3 | <sup>2</sup> <sub>6</sub> 4 | <sup>2</sup> <sub>9</sub> 4 | <sup>2</sup> <sub>3</sub> 6 | 8                           | <sup>3</sup> <sub>4</sub>   | <sup>1</sup> <sub>2</sub> 5 |
| <sup>4</sup> <sub>5</sub> 9 | <sup>3</sup> <sub>7</sub>   | <sup>6</sup> <sub>8</sub> 9 | <sup>2</sup> <sub>8</sub> 9 | <sup>1</sup> <sub>4</sub> 8 | <sup>2</sup> <sub>3</sub> 9 | 1                           | <sup>2</sup> <sub>4</sub>   | <sup>3</sup> <sub>7</sub> 5 |
| <sup>1</sup> <sub>4</sub> 9 | 8                           | <sup>2</sup> <sub>3</sub> 5 | <sup>4</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>7</sub>   | <sup>2</sup> <sub>3</sub> 1 | 2                           | <sup>1</sup> <sub>2</sub> 6 | <sup>1</sup> <sub>2</sub> 7 |
| <sup>1</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>6</sub> 9 | <sup>3</sup> <sub>5</sub>   | <sup>1</sup> <sub>8</sub> 6 | 2                           | 7                           | 4                           | <sup>1</sup> <sub>9</sub> 8 | <sup>1</sup> <sub>6</sub>   |
| 2                           | <sup>1</sup> <sub>6</sub>   | 8                           | 4                           | 5                           | 9                           | <sup>1</sup> <sub>7</sub> 6 | <sup>1</sup> <sub>7</sub>   | 3                           |
| 7                           | <sup>1</sup> <sub>6</sub> 9 | <sup>3</sup> <sub>6</sub> 8 | <sup>1</sup> <sub>8</sub> 6 | <sup>1</sup> <sub>8</sub> 6 | <sup>3</sup> <sub>8</sub> 6 | 5                           | <sup>1</sup> <sub>9</sub> 8 | <sup>1</sup> <sub>2</sub> 6 |
| 8                           | 2                           | <sup>7</sup> <sub>9</sub>   | <sup>1</sup> <sub>9</sub> 4 | <sup>1</sup> <sub>4</sub> 5 | <sup>6</sup> <sub>9</sub>   | 3                           | <sup>1</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>6</sub>   |
| 3                           | 4                           | 1                           | 7                           | <sup>6</sup> <sub>8</sub>   | <sup>2</sup> <sub>5</sub> 6 | <sup>2</sup> <sub>6</sub> 8 | <sup>2</sup> <sub>5</sub> 8 | 9                           |
| 6                           | 5                           | <sup>7</sup> <sub>9</sub>   | <sup>1</sup> <sub>8</sub> 9 | 3                           | <sup>1</sup> <sub>2</sub> 8 | <sup>1</sup> <sub>2</sub> 7 | <sup>1</sup> <sub>2</sub> 8 | 4                           |

|                             |                             |                                 |                                 |                                       |                                   |                               |                             |                               |                             |
|-----------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------------|-----------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|
| 7                           | <sup>3</sup> <sub>8 9</sub> | <sup>4</sup> <sub>8 9</sub>     | <sup>1</sup> <sub>4 5 9</sub>   | <sup>1</sup> <sub>5 9</sub>           | <sup>3</sup> <sub>9</sub>         | <sup>1</sup> <sub>3 9</sub>   | <sup>5</sup> <sub>9</sub>   | 6                             | 2                           |
| 1                           | 2                           | <sup>4</sup> <sub>6 9</sub>     | <sup>3</sup> <sub>4 5 9</sub>   | <sup>5</sup> <sub>6 9</sub>           | <sup>3</sup> <sub>7 9</sub>       | <sup>3</sup> <sub>6 9</sub>   | <sup>5</sup> <sub>7 9</sub> | 8                             | <sup>4</sup> <sub>5 9</sub> |
| 5                           | <sup>6</sup> <sub>9</sub>   | <sup>4</sup> <sub>6 9</sub>     | 2                               | 8                                     | <sup>7</sup> <sub>6 9</sub>       | 3                             | 1                           | <sup>4</sup> <sub>7 9</sub>   |                             |
| <sup>2 3</sup> <sub>7</sub> | 4                           | <sup>1 2 3</sup> <sub>7</sub>   | 6                               | <sup>1 2 3</sup> <sub>5 9 7 9</sub>   | <sup>1 2 3</sup> <sub>7 9</sub>   | 8                             | <sup>3</sup> <sub>7 9</sub> | <sup>1</sup> <sub>3 9</sub>   |                             |
| 9                           | <sup>1</sup> <sub>8</sub>   | <sup>3</sup> <sub>6</sub>       | 5                               | <sup>1</sup> <sub>7 8</sub>           | <sup>1</sup> <sub>3</sub>         | 4                             | 2                           | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>6</sub>   |
| <sup>2 3</sup> <sub>8</sub> | <sup>1</sup> <sub>6</sub>   | <sup>1 2 3</sup> <sub>7</sub>   | <sup>1</sup> <sub>5 9</sub>     | <sup>1 2 3</sup> <sub>5 9 7 8 9</sub> | <sup>1 2 3</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>5 6 9</sub> | 4                           | <sup>1</sup> <sub>5 6 9</sub> |                             |
| <sup>2 3</sup> <sub>8</sub> | 5                           | <sup>1 2 3</sup> <sub>6 9</sub> | <sup>1</sup> <sub>9</sub>       | 4                                     | <sup>1</sup> <sub>6 8 9</sub>     | <sup>1</sup> <sub>2</sub>     | <sup>6</sup> <sub>7 9</sub> | <sup>2</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>3</sub>   |
| 4                           | <sup>1</sup> <sub>8 9</sub> | <sup>3</sup> <sub>6 8 9</sub>   | <sup>1 2 3</sup> <sub>8 9</sub> | <sup>1</sup> <sub>8 9</sub>           | 7                                 | 5                             | <sup>1</sup> <sub>6 9</sub> | <sup>2 3</sup> <sub>9</sub>   | <sup>1</sup> <sub>6 9</sub> |
| <sup>2</sup> <sub>6</sub>   | 7                           | <sup>1 2</sup> <sub>6 9</sub>   | 3                               | <sup>1 2</sup> <sub>6 9</sub>         | <sup>1 2</sup> <sub>6 9</sub>     | 4                             | 5                           | 8                             |                             |

|                             |                               |                             |                               |                               |                               |                                     |                               |                                 |                             |
|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------------|-------------------------------|---------------------------------|-----------------------------|
| 2                           | <sup>3</sup> <sub>7 5 6</sub> | <sup>5</sup> <sub>7 9</sub> | 8                             | 1                             | <sup>4</sup> <sub>5 7</sub>   | <sup>3</sup> <sub>9</sub>           | <sup>3</sup> <sub>6 7</sub>   | <sup>4</sup> <sub>6 9</sub>     | <sup>3</sup> <sub>4 9</sub> |
| <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub>     | 4                           | 8                             | <sup>2</sup> <sub>7 6</sub>   | 9                             | <sup>1 2 3</sup> <sub>7 6</sub>     | <sup>1</sup> <sub>2 6</sub>   | 5                               |                             |
| <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>5 6</sub> | <sup>3</sup> <sub>5 9</sub>   | <sup>2</sup> <sub>4 5 6</sub> | <sup>3</sup> <sub>5 6 7</sub> | <sup>1 2 3</sup> <sub>8 7 8 9</sub> | <sup>1</sup> <sub>2 6 4</sub> | <sup>1 2 3</sup> <sub>8 9</sub> |                             |
| <sup>4</sup> <sub>7 8</sub> | <sup>5</sup> <sub>7 8</sub>   | 1                           | <sup>4</sup> <sub>5 6 7</sub> | <sup>5</sup> <sub>7 9</sub>   | <sup>4</sup> <sub>5 7 8</sub> | <sup>2</sup> <sub>8</sub>           | 3                             | <sup>2</sup> <sub>8</sub>       |                             |
| <sup>4</sup> <sub>5 8</sub> | <sup>3</sup> <sub>6</sub>     | 9                           | <sup>4</sup> <sub>5</sub>     | <sup>3</sup> <sub>4 5 6</sub> | <sup>5</sup> <sub>5 6</sub>   | <sup>1</sup> <sub>8</sub>           | <sup>1</sup> <sub>6 8</sub>   | 7                               |                             |
| <sup>5</sup> <sub>7 8</sub> | <sup>2</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5</sub>   | 1                             | 3                             | <sup>5</sup> <sub>7 8</sub>   | 4                                   | <sup>2</sup> <sub>6 8 9</sub> | <sup>2</sup> <sub>8 9</sub>     |                             |
| 9                           | <sup>5</sup> <sub>7</sub>     | 6                           | 2                             | 4                             | <sup>5</sup> <sub>7</sub>     | <sup>1</sup> <sub>8</sub>           | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>3</sub>       |                             |
| <sup>1</sup> <sub>5 8</sub> | <sup>3</sup> <sub>8</sub>     | <sup>1</sup> <sub>5</sub>   | <sup>3</sup> <sub>5</sub>     | <sup>3</sup> <sub>5 8 9</sub> | <sup>5</sup> <sub>8 9</sub>   | 7                                   | <sup>2</sup> <sub>4</sub>     | <sup>2</sup> <sub>4</sub>       |                             |
| <sup>4</sup> <sub>7 8</sub> | <sup>3</sup> <sub>7 8</sub>   | <sup>2 3</sup> <sub>7</sub> | <sup>2 3</sup> <sub>4</sub>   | <sup>2 3</sup> <sub>7</sub>   | <sup>3</sup> <sub>7 8</sub>   | 1                                   | 9                             | 5                               | 6                           |

|                               |                               |                             |                               |                               |                               |                               |                                 |                                 |                               |
|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|
| 1                             | <sup>3</sup> <sub>8</sub>     | <sup>4</sup> <sub>8</sub>   | 5                             | <sup>3</sup> <sub>6 9</sub>   | <sup>4</sup> <sub>7 6</sub>   | <sup>3</sup> <sub>4 7</sub>   | 2                               | <sup>4</sup> <sub>9</sub>       |                               |
| <sup>5</sup> <sub>9</sub>     | <sup>3</sup> <sub>5</sub>     | <sup>3</sup> <sub>4 5</sub> | 2                             | 8                             | <sup>1</sup> <sub>4 7</sub>   | <sup>1</sup> <sub>3 4</sub>   | 6                               | <sup>1</sup> <sub>4 5 9</sub>   |                               |
| <sup>3</sup> <sub>5 6 9</sub> | 2                             | 7                           | <sup>1</sup> <sub>6 9</sub>   | <sup>3</sup> <sub>1 6 4</sub> | <sup>3</sup> <sub>1 6 4</sub> | 8                             | <sup>1</sup> <sub>4 5 9</sub>   | <sup>1</sup> <sub>4 5 9</sub>   |                               |
| 2                             | <sup>6</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>8</sub>   | 7                             | <sup>1</sup> <sub>4 6 9</sub> | 5                             | <sup>1</sup> <sub>4 6 8</sub> | 3                               |                                 |                               |
| 4                             | <sup>3</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>5 8</sub> | <sup>3</sup> <sub>6 8 9</sub> | <sup>1</sup> <sub>6 8 9</sub> | <sup>1 2</sup> <sub>6 9</sub> | <sup>1 2</sup> <sub>6</sub>   | <sup>1</sup> <sub>5 7 8</sub>   | <sup>1 2</sup> <sub>5 8</sub>   |                               |
| <sup>5</sup> <sub>7 8</sub>   | <sup>5</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>5 8</sub> | <sup>1</sup> <sub>6 8</sub>   | <sup>1 2</sup> <sub>4 6</sub> | 3                             | 9                             | <sup>1</sup> <sub>4 5 7 8</sub> | <sup>1 2</sup> <sub>4 5 8</sub> |                               |
| <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>4 5</sub>   | 6                           | <sup>1</sup> <sub>3 5</sub>   | <sup>1 2 3</sup> <sub>5</sub> | 8                             | <sup>1 2 3</sup> <sub>4</sub> | <sup>1</sup> <sub>3 4 9</sub>   | <sup>1 2</sup> <sub>4 9</sub>   |                               |
| <sup>3</sup> <sub>8</sub>     | <sup>1</sup> <sub>4 8</sub>   | 9                           | <sup>1</sup> <sub>6</sub>     | <sup>3</sup> <sub>7 6</sub>   | 7                             | <sup>1 2</sup> <sub>6</sub>   | 5                               | <sup>1</sup> <sub>4 8</sub>     | <sup>1 2</sup> <sub>6 8</sub> |
| <sup>5</sup> <sub>8</sub>     | <sup>3</sup> <sub>5 8</sub>   | 2                           | 4                             | <sup>1</sup> <sub>5 6</sub>   | 9                             | <sup>1</sup> <sub>3 6</sub>   | <sup>1</sup> <sub>3</sub>       | 7                               |                               |

|                               |                             |                             |                               |                             |                             |                                 |                           |                             |  |
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| <sup>2 3</sup> <sub>4 7</sub> | 1                           | 8                           | 5                             | <sup>2</sup> <sub>7 9</sub> | <sup>4</sup> <sub>6</sub>   | <sup>2</sup> <sub>7 9</sub>     | 6                         | <sup>3</sup> <sub>9</sub>   |  |
| <sup>2 3</sup> <sub>4 7</sub> | <sup>5</sup> <sub>6 7</sub> | <sup>4</sup> <sub>6</sub>   | <sup>3</sup> <sub>6 7 9</sub> | <sup>2</sup> <sub>6 9</sub> | <sup>4</sup> <sub>7 9</sub> | <sup>2 3</sup> <sub>5 7 9</sub> | 8                         | 1                           |  |
| 9                             | <sup>2</sup> <sub>7</sub>   | <sup>3</sup> <sub>5 6</sub> | <sup>3</sup> <sub>6</sub>     | 1                           | 8                           | 4                               | <sup>2</sup> <sub>5</sub> | <sup>3</sup> <sub>5</sub>   |  |
| <sup>5</sup> <sub>9</sub>     | 9                           | <sup>3</sup> <sub>6</sub>   | 7                             | 2                           | <sup>5</sup> <sub>6</sub>   | 8                               | 1                         | 4                           |  |
| 8                             | <sup>5</sup> <sub>6</sub>   | 7                           | 1                             | 4                           | <sup>5</sup> <sub>6</sub>   | <sup>3</sup> <sub>9</sub>       | <sup>3</sup> <sub>9</sub> | 2                           |  |
| 1                             | 4                           | 2                           | 8                             | 3                           | 9                           | 6                               | 5                         | 7                           |  |
| 6                             | <sup>2</sup> <sub>7</sub>   | 1                           | 4                             | <sup>5</sup> <sub>9</sub>   | 3                           | <sup>5</sup> <sub>9 7</sub>     | 8                         |                             |  |
| <sup>2</sup> <sub>7</sub>     | 3                           | <sup>4</sup> <sub>5 9</sub> | <sup>6</sup> <sub>9</sub>     | 8                           | 1                           | <sup>2</sup> <sub>7</sub>       | <sup>4</sup> <sub>9</sub> | <sup>5</sup> <sub>6 9</sub> |  |
| <sup>4</sup> <sub>5</sub>     | 8                           | <sup>4</sup> <sub>9</sub>   | 2                             | <sup>5</sup> <sub>6 9</sub> | 7                           | 1                               | <sup>3</sup> <sub>9</sub> | <sup>3</sup> <sub>6 9</sub> |  |

|                                   |                                   |                               |                             |                               |                               |                               |                                 |                               |  |
|-----------------------------------|-----------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|--|
| <sup>1</sup> <sub>9</sub>         | 7                                 | 2                             | 4                           | <sup>6</sup> <sub>9</sub>     | <sup>1</sup> <sub>6</sub>     | 3                             | 5                               | 8                             |  |
| <sup>1</sup> <sub>4 9</sub>       | <sup>3</sup> <sub>4 9</sub>       | <sup>1</sup> <sub>4 5</sub>   | 8                           | <sup>2</sup> <sub>5 9</sub>   | 7                             | <sup>1</sup> <sub>4 6 9</sub> | <sup>1 2</sup> <sub>4 9</sub>   | <sup>1 2</sup> <sub>6 9</sub> |  |
| 8                                 | 6                                 | <sup>1</sup> <sub>4 5</sub>   | <sup>2 3</sup> <sub>5</sub> | <sup>2</sup> <sub>5 9</sub>   | <sup>1 2 3</sup> <sub>9</sub> | <sup>1</sup> <sub>4 7 9</sub> | <sup>1 2</sup> <sub>4 7 9</sub> | <sup>1 2</sup> <sub>6 9</sub> |  |
| <sup>1</sup> <sub>6</sub>         | <sup>3</sup> <sub>6</sub>         | <sup>1</sup> <sub>6</sub>     | <sup>7</sup> <sub>9</sub>   | 8                             | 5                             | 2                             | <sup>7</sup> <sub>9</sub>       | 4                             |  |
| 7                                 | <sup>2</sup> <sub>4</sub>         | 8                             | <sup>2</sup> <sub>9</sub>   | <sup>1</sup> <sub>4 6</sub>   | <sup>2</sup> <sub>5 6 9</sub> | 3                             | <sup>5</sup> <sub>6 9</sub>     |                               |  |
| <sup>2</sup> <sub>4</sub>         | 5                                 | 9                             | <sup>2 3</sup> <sub>7</sub> | <sup>2</sup> <sub>4 6 7</sub> | <sup>2 3</sup> <sub>4 6</sub> | <sup>1</sup> <sub>7</sub>     | 8                               | <sup>1</sup> <sub>6 7</sub>   |  |
| 5                                 | <sup>1 2</sup> <sub>4 9</sub>     | <sup>1</sup> <sub>4 7</sub>   | 6                           | <sup>2</sup> <sub>4 7</sub>   | 8                             | <sup>1</sup> <sub>4 7 9</sub> | <sup>1 2</sup> <sub>4 7 9</sub> | 3                             |  |
| <sup>2</sup> <sub>4 9</sub>       | 8                                 | <sup>4</sup> <sub>7</sub>     | 1                           | 3                             | <sup>2</sup> <sub>4 7</sub>   | <sup>4</sup> <sub>5 7</sub>   | 6                               | <sup>2</sup> <sub>5 9</sub>   |  |
| <sup>1 2 3</sup> <sub>4 6 7</sub> | <sup>1 2 3</sup> <sub>4 6 7</sub> | <sup>1</sup> <sub>4 6 7</sub> | <sup>2</sup> <sub>5 7</sub> | <sup>2</sup> <sub>4 5 7</sub> | 9                             | 8                             | <sup>1 2</sup> <sub>4 7</sub>   | <sup>1 2</sup> <sub>7</sub>   |  |

|                               |                               |                             |                                 |                               |                                   |                               |                               |                           |  |
|-------------------------------|-------------------------------|-----------------------------|---------------------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------|---------------------------|--|
| <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>4 8</sub>   | <sup>1</sup> <sub>8</sub>   | 6                               | 2                             | 7                                 | <sup>3</sup> <sub>5 9</sub>   | <sup>3</sup> <sub>5</sub>     | <sup>3</sup> <sub>9</sub> |  |
| 6                             | 7                             | 3                           | <sup>8</sup> <sub>9</sub>       | <sup>8</sup> <sub>9</sub>     | 5                                 | 1                             | 4                             | 2                         |  |
| 9                             | 5                             | 2                           | <sup>1</sup> <sub>4</sub>       | <sup>3</sup> <sub>4</sub>     | <sup>1 3</sup> <sub>4</sub>       | 6                             | 7                             | 8                         |  |
| 8                             | <sup>1 2</sup> <sub>5 9</sub> | <sup>2</sup> <sub>4 5</sub> | <sup>2</sup> <sub>4 5 6 4</sub> | <sup>2</sup> <sub>6 4</sub>   | <sup>2 3</sup> <sub>9</sub>       | <sup>1 2 3</sup> <sub>9</sub> | 7                             |                           |  |
| <sup>2</sup> <sub>7</sub>     | 3                             | 4                           | <sup>2</sup> <sub>7</sub>       | 1                             | 9                                 | 8                             | 6                             | 5                         |  |
| <sup>1 2</sup> <sub>7</sub>   | 6                             | <sup>5</sup> <sub>9</sub>   | 3                               | <sup>4</sup> <sub>5 7</sub>   | 8                                 | <sup>2</sup> <sub>4 9</sub>   | <sup>1 2</sup> <sub>9</sub>   | <sup>1</sup> <sub>9</sub> |  |
| 5                             | <sup>1 2</sup> <sub>4 8</sub> | <sup>1</sup> <sub>8</sub>   | <sup>1 2</sup> <sub>7 8</sub>   | <sup>3</sup> <sub>7 8</sub>   | <sup>1 2 3</sup> <sub>4 6 7</sub> | <sup>2 3</sup> <sub>7</sub>   | 9                             | <sup>1</sup> <sub>3</sub> |  |
| <sup>1 2 3</sup> <sub>4</sub> | 9                             | 7                           | <sup>1 2</sup> <sub>4 5</sub>   | <sup>3</sup> <sub>4 5</sub>   | <sup>1 2 3</sup> <sub>4</sub>     | <sup>2 3</sup> <sub>5</sub>   | 8                             | 6                         |  |
| <sup>1 2 3</sup> <sub>4</sub> | <sup>1 2</sup> <sub>8</sub>   | 6                           | <sup>1 2</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>5 8 9</sub> | <sup>1 2 3</sup> <sub>7</sub>     | <sup>2 3</sup> <sub>5</sub>   | <sup>1 2 3</sup> <sub>5</sub> | 4                         |  |

|                       |                       |                         |                       |                       |                     |                       |                           |                         |
|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|---------------------|-----------------------|---------------------------|-------------------------|
| 6                     | 3                     | <sup>1 2</sup><br>8 9   | <sup>1 2</sup><br>7 8 | 5                     | <sup>2</sup><br>7 9 | <sup>2</sup><br>7 8   | <sup>1 2</sup><br>7 8     | 4                       |
| <sup>1</sup><br>8 9   | <sup>1</sup><br>8 9   | 5                       | <sup>1 2</sup><br>7 8 | <sup>1</sup><br>4     | <sup>2</sup><br>4 6 | <sup>2 3</sup><br>7 8 | <sup>1 2 3</sup><br>7 8   | <sup>1 2 3</sup><br>8 9 |
| 7                     | 4                     | <sup>1 2</sup><br>8 9   | <sup>1 2</sup><br>8   | 3                     | <sup>2</sup><br>9   | <sup>2</sup><br>5 8   | 6                         | <sup>1 2</sup><br>5 8 9 |
| <sup>1 3</sup><br>8 9 | 2                     | <sup>1 3</sup><br>7 8 9 | 4                     | <sup>3</sup><br>7 8 9 | 5                   | <sup>3</sup><br>8     | <sup>1 3</sup><br>8       | <sup>1 3</sup><br>6     |
| 4 5                   | <sup>6</sup><br>7 8   | <sup>3</sup><br>7 8     | <sup>2 3</sup><br>7 8 | 1                     | 9                   | 4 5                   | <sup>2 3</sup><br>8       | <sup>2 3</sup><br>6     |
| 4 5                   | <sup>1</sup><br>8 9   | <sup>1 3</sup><br>8 9   | <sup>2 3</sup><br>8   | 6                     | <sup>2 3</sup><br>9 | <sup>2 3</sup><br>4 8 | <sup>1 2 3</sup><br>4 5 8 | 7                       |
| <sup>1 3</sup><br>8   | <sup>1</sup><br>7 8   | <sup>6</sup><br>7 8     | 4                     | <sup>1</sup><br>7     | <sup>3</sup><br>6   | <sup>3</sup><br>5 6   | 9                         | <sup>3</sup><br>5 6     |
| 2                     | 5                     | <sup>1 3</sup><br>7     | 9                     | <sup>1</sup><br>4     | <sup>3</sup><br>7   | <sup>3</sup><br>4 6   | <sup>3</sup><br>4 7       | <sup>3</sup><br>6       |
| <sup>3</sup><br>8 9   | <sup>6</sup><br>7 8 9 | <sup>3</sup><br>7 8 9   | 5                     | <sup>4</sup><br>7     | <sup>3</sup><br>4 7 | <sup>2 3</sup><br>6   | 1                         | <sup>2 3</sup><br>4 7 8 |

|                         |                       |                       |                     |                         |                       |                       |                       |                         |
|-------------------------|-----------------------|-----------------------|---------------------|-------------------------|-----------------------|-----------------------|-----------------------|-------------------------|
| <sup>1 2</sup><br>4     | <sup>1 2</sup><br>5   | <sup>2</sup><br>4 5   | 7                   | <sup>2 3</sup><br>5 8   | <sup>4 5</sup><br>8 9 | <sup>2 3</sup><br>5   | 6                     | <sup>2 3</sup><br>4 5 9 |
| 8                       | 3                     | <sup>2</sup><br>4 5   | <sup>2</sup><br>5 6 | <sup>1 2</sup><br>5 6   | <sup>1</sup><br>4 5   | 7                     | <sup>2</sup><br>4 5   | <sup>1 2</sup><br>4 5 9 |
| 7                       | 6                     | 9                     | <sup>2 3</sup><br>5 | <sup>1 2 3</sup><br>1 5 | <sup>1</sup><br>4 5   | 8                     | <sup>2 3</sup><br>4 5 | <sup>1 2 3</sup><br>4 5 |
| <sup>2 3</sup><br>9     | <sup>2</sup><br>5     | <sup>2 3</sup><br>5   | 1                   | 4                       | 7                     | 6                     | 8                     | <sup>2 3</sup><br>5 9   |
| <sup>2 3</sup><br>4     | 7                     | 1                     | <sup>3</sup><br>5 6 | <sup>3</sup><br>5 6     | <sup>5</sup><br>8     | <sup>2 3</sup><br>4 5 | <sup>2 3</sup><br>5 9 | <sup>2 3</sup><br>5 9   |
| 6                       | <sup>5</sup><br>8     | <sup>4 5</sup><br>8   | <sup>3</sup><br>5   | 9                       | 2                     | <sup>4 5</sup><br>3   | 1                     | 7                       |
| 5                       | 9                     | <sup>2 3</sup><br>7 8 | 4                   | <sup>1 2</sup><br>8     | <sup>1</sup><br>8     | <sup>1 2 3</sup><br>7 | <sup>2 3</sup><br>8   | <sup>2 3</sup><br>6     |
| <sup>1 2</sup><br>1 2 3 | 4                     | <sup>6</sup><br>8     | 9                   | 7                       | 3                     | <sup>1 2</sup><br>5   | <sup>2</sup><br>5     | <sup>6</sup><br>8       |
| <sup>1 2 3</sup><br>8   | <sup>1 2</sup><br>7 8 | <sup>2 3</sup><br>8   | <sup>2</sup><br>5 8 | <sup>1 2</sup><br>5 8   | 6                     | 9                     | <sup>2 3</sup><br>4 7 | <sup>2 3</sup><br>4 8   |

|                     |                     |                     |                       |                         |                     |                         |                         |                       |
|---------------------|---------------------|---------------------|-----------------------|-------------------------|---------------------|-------------------------|-------------------------|-----------------------|
| <sup>1 2</sup><br>8 | <sup>2 3</sup><br>6 | <sup>2</sup><br>5 6 | 4                     | <sup>2 3</sup><br>7     | <sup>2</sup><br>5   | <sup>1 2 3</sup><br>5 6 | 9                       | <sup>1 3</sup><br>8 6 |
| <sup>2</sup><br>4   | <sup>2 3</sup><br>4 | <sup>2</sup><br>5   | <sup>2 3</sup><br>5   | 6                       | 1                   | <sup>2 3</sup><br>5     | 7                       | <sup>3</sup><br>8     |
| <sup>1 2</sup><br>6 | <sup>2 3</sup><br>6 | 7                   | <sup>2 3</sup><br>5   | 9                       | 8                   | 4                       | <sup>1 2 3</sup><br>5 6 | <sup>1 3</sup><br>1 6 |
| <sup>4</sup><br>8   | 7                   | 1                   | 6                     | 5                       | 9                   | <sup>3</sup><br>8       | <sup>3</sup><br>4       | 2                     |
| <sup>2</sup><br>4   | <sup>6</sup><br>8   | 5                   | <sup>1 2</sup><br>8   | <sup>1 2</sup><br>4     | 3                   | 9                       | <sup>1</sup><br>4       | <sup>6</sup><br>7     |
| 3                   | <sup>2</sup><br>4   | <sup>6</sup><br>8 9 | 7                     | <sup>1 2</sup><br>4     | <sup>2</sup><br>8   | <sup>1</sup><br>6       | <sup>1</sup><br>4       | 5                     |
| 7                   | <sup>2</sup><br>9   | 3                   | <sup>1 2</sup><br>5   | <sup>1 2</sup><br>4     | 6                   | <sup>1 2</sup><br>5     | 8                       | <sup>1</sup><br>4     |
| <sup>2</sup><br>5 6 | 1                   | 8                   | <sup>2 3</sup><br>5   | <sup>2 3</sup><br>4     | <sup>2</sup><br>4 5 | 7                       | <sup>2 3</sup><br>5 6   | <sup>3</sup><br>4 6   |
| <sup>2</sup><br>5 6 | <sup>2</sup><br>6   | 4                   | <sup>1 2 3</sup><br>5 | <sup>1 2 3</sup><br>7 8 | <sup>2</sup><br>5   | <sup>1 2 3</sup><br>5 6 | <sup>1 2 3</sup><br>5 6 | 9                     |

|                     |                       |                     |                   |                   |                   |                       |                         |                       |
|---------------------|-----------------------|---------------------|-------------------|-------------------|-------------------|-----------------------|-------------------------|-----------------------|
| <sup>1</sup><br>4 5 | <sup>1</sup><br>4 5 6 | <sup>3</sup><br>5 6 | 2                 | 7                 | <sup>1</sup><br>5 | <sup>3</sup><br>4 5 6 | <sup>4 5 6</sup><br>8   | 9                     |
| 8                   | <sup>1</sup><br>4 5 6 | <sup>2</sup><br>7   | 3                 | 9                 | <sup>1</sup><br>5 | <sup>2</sup><br>4 5 6 | <sup>4 5 6</sup><br>7   | <sup>4 5</sup><br>7   |
| 9                   | <sup>3</sup><br>5     | <sup>2</sup><br>7   | 4                 | 6                 | 8                 | <sup>2 3</sup><br>5   | <sup>5</sup><br>7       | 1                     |
| 3                   | 2                     | <sup>1</sup><br>5   | <sup>5</sup><br>7 | <sup>4</sup><br>8 | 6                 | 9                     | <sup>1</sup><br>4 5 7 8 | <sup>4 5</sup><br>7 8 |
| <sup>1</sup><br>4 5 | <sup>1</sup><br>4 5 6 | <sup>1</sup><br>5 6 | <sup>5</sup><br>7 | 2                 | 9                 | <sup>1</sup><br>4 5 6 | <sup>3</sup><br>4 5 7 8 | <sup>4 5</sup><br>7 8 |
| 7                   | <sup>4 5 6</sup><br>8 | 9                   | 1                 | <sup>4</sup><br>8 | 3                 | <sup>4 5 6</sup><br>8 | <sup>4 5 6</sup><br>8   | 2                     |
| 2                   | <sup>1</sup><br>5     | <sup>3</sup><br>5   | <sup>1</sup><br>6 | <sup>5</sup><br>7 | 4                 | 9                     | <sup>4</sup><br>8       | <sup>8</sup><br>9     |
| <sup>1</sup><br>5   | 9                     | 4                   | 8                 | 3                 | 2                 | <sup>1</sup><br>5     | <sup>1</sup><br>5       | 6                     |
| 6                   | 7                     | 8                   | 9                 | <sup>1</sup><br>5 | 4                 | <sup>1</sup><br>5     | 2                       | 3                     |

|                     |                         |                         |                   |                       |                         |                       |                           |                         |
|---------------------|-------------------------|-------------------------|-------------------|-----------------------|-------------------------|-----------------------|---------------------------|-------------------------|
| <sup>1</sup><br>8   | 7                       | <sup>5</sup><br>8       | 6                 | 9                     | <sup>1 3</sup><br>8     | 4                     | <sup>2 3</sup><br>5 8     | <sup>2 3</sup><br>5     |
| 9                   | <sup>3</sup><br>4 5 6   | 2                       | <sup>5</sup><br>8 | <sup>3</sup><br>5 8   | <sup>3</sup><br>4 8     | <sup>3</sup><br>6     | 7                         | 1                       |
| <sup>1</sup><br>4   | <sup>1</sup><br>4 5 6   | <sup>3</sup><br>4 5 6   | <sup>1</sup><br>5 | 2                     | <sup>1 3</sup><br>4 7 8 | <sup>3</sup><br>6     | <sup>3</sup><br>5 6       | <sup>3</sup><br>5 6 9   |
| <sup>1 2</sup><br>4 | <sup>1 2</sup><br>4 5 6 | <sup>4 5 6</sup><br>7   | 3                 | <sup>1</sup><br>7     | 9                       | <sup>1</sup><br>6     | <sup>1</sup><br>4 5 6     | 8                       |
| 3                   | <sup>1</sup><br>5 6     | <sup>5 6</sup><br>8 9   | 4                 | <sup>1</sup><br>5 8   | 2                       | <sup>1</sup><br>6     | <sup>1</sup><br>5 6 9     | 7                       |
| <sup>1</sup><br>4   | <sup>1</sup><br>4 5     | <sup>4 5</sup><br>7 8 9 | <sup>1</sup><br>5 | 6                     | <sup>1</sup><br>7 8     | 2                     | <sup>1 3</sup><br>4 5 9   | <sup>3</sup><br>4 5 9   |
| 7                   | <sup>2</sup><br>4       | <sup>6</sup><br>8       | 1                 | <sup>3</sup><br>8     | <sup>3</sup><br>8       | 5                     | <sup>2 3</sup><br>4 6     | <sup>2 3</sup><br>4 6   |
| <sup>2</sup><br>4   | <sup>6</sup><br>8       | 9                       | 3                 | <sup>1 2</sup><br>7 8 | <sup>1</sup><br>7 8     | 5                     | <sup>1</sup><br>7 8       | <sup>1 2</sup><br>6 4 6 |
| 5                   | <sup>2</sup><br>8       | <sup>6</sup><br>8       | 4                 | <sup>1</sup><br>7 8   | <sup>3</sup><br>6       | <sup>1</sup><br>7 8 9 | <sup>1 2 3</sup><br>6 8 9 | <sup>2 3</sup><br>6 9   |

|                       |                     |                   |                         |                     |                       |                     |                         |                       |
|-----------------------|---------------------|-------------------|-------------------------|---------------------|-----------------------|---------------------|-------------------------|-----------------------|
| <sup>1</sup><br>4     | 6                   | <sup>2</sup><br>8 | <sup>5</sup><br>9       | <sup>3</sup><br>5 9 | <sup>3</sup><br>5 9   | 7                   | <sup>1 2</sup><br>4 8   | <sup>1</sup><br>4 8   |
| <sup>5</sup><br>9     | <sup>2</sup><br>8   | <sup>5</sup><br>9 | 4                       | 7                   | 1                     | <sup>2</sup><br>8   | <sup>2</sup><br>8       | 3                     |
| <sup>1</sup><br>4     | 7                   | 3                 | 6                       | 2                   | 8                     | 9                   | 5                       | <sup>1</sup><br>4     |
| <sup>3</sup><br>8 9   | <sup>1</sup><br>4   | <sup>3</sup><br>8 | 6                       | <sup>5</sup><br>7   | <sup>1</sup><br>5 9   | <sup>5</sup><br>7 9 | <sup>1</sup><br>4       | <sup>1 3</sup><br>8 9 |
| <sup>2</sup><br>5     | <sup>1 2</sup><br>4 | <sup>5</sup><br>9 | 3                       | 8                   | 6                     | <sup>1</sup><br>4   | <sup>1</sup><br>7       | <sup>1</sup><br>7 9   |
| <sup>3</sup><br>8 9   | <sup>1</sup><br>4   | <sup>3</sup><br>8 | 7                       | 2                   | <sup>1</sup><br>9     | 4                   | <sup>1</sup><br>6       | <sup>3</sup><br>8 9   |
| <sup>2</sup><br>7 8   | 9                   | 1                 | <sup>5</sup><br>7 8     | 6                   | <sup>2</sup><br>7     | 3                   | <sup>2</sup><br>4 7 8   | <sup>4</sup><br>7 8   |
| <sup>2 3</sup><br>7 8 | <sup>6</sup><br>5   | <sup>2</sup><br>8 | <sup>2 3</sup><br>7 8 9 | 4                   | <sup>1 2</sup><br>7 9 | <sup>1 2</sup><br>8 | <sup>1 2</sup><br>7 8 9 | <sup>6</sup><br>7 8 9 |
| <sup>2 3</sup><br>7 8 | <sup>2 3</sup><br>8 | 4                 | <sup>1</sup><br>9       | <sup>3</sup><br>7 9 | <sup>2 3</sup><br>9   | 5                   | <sup>2</sup><br>7 8 9   | <sup>6</sup><br>7 8 9 |

|             |             |               |               |             |             |          |              |               |
|-------------|-------------|---------------|---------------|-------------|-------------|----------|--------------|---------------|
| 1<br>8      | 3           | 2             | 1<br>4<br>7   | 4<br>7      | 1<br>7 8    | 5        | 6            | 9             |
| 1<br>4<br>8 | 1<br>4<br>8 | 5             | 6             | 3           | 9           | 1 2<br>8 | 1 2<br>7 8   | 1 2<br>7 8    |
| 9           | 7<br>6      | 7<br>6        | 2             | 5           | 1<br>8      | 1<br>8   | 4            | 3             |
| 7           | 1<br>6      | 1<br>3<br>6   | 5<br>3        | 8           | 4           | 9        | 1 2 3<br>5   | 1 2<br>5      |
| 1<br>8      | 3<br>8      | 4             | 7<br>9        | 7<br>9      | 7<br>5      | 1<br>3   | 5            | 6             |
| 2           | 5           | 9             | 7<br>3        | 1           | 6           | 4<br>8   | 7<br>8       | 4<br>7 8      |
| 1<br>4<br>6 | 3<br>9      | 1<br>7<br>3   | 8             | 4<br>7      | 2<br>6<br>7 | 1 2<br>5 | 1 2 3<br>4 6 | 1 2<br>4 5    |
| 1<br>4<br>6 | 2           | 1<br>8        | 1<br>4 5<br>9 | 4<br>6<br>9 | 3           | 7        | 1<br>5<br>8  | 1<br>4 5<br>8 |
| 5           | 1<br>4<br>7 | 1<br>3<br>7 8 | 1<br>4<br>7   | 2<br>4<br>7 | 6<br>7      | 1 2<br>7 | 1 2 3<br>4 8 | 1 2<br>9      |

|             |             |               |               |              |       |            |             |                                 |
|-------------|-------------|---------------|---------------|--------------|-------|------------|-------------|---------------------------------|
| 4<br>6<br>9 | 3           | 4 5<br>9      | 5 6<br>8      | 4 5 6        | 1     | 2<br>7     | 4<br>8 9    | 2<br>7                          |
| 8           | 7           | 1<br>4 5<br>9 | 3<br>5 6      | 4 5 6        | 2     | 1<br>4     | 6<br>4      | 6<br>6<br>9                     |
| 1<br>4      | 6           | 4             | 6             | 2            | 7     | 9          | 4<br>6<br>8 | 1<br>3<br>3<br>4<br>6<br>6<br>5 |
| 2 3<br>4    | 2<br>6<br>9 | 3<br>4        | 1 2<br>6<br>9 | 7            | 4 5 6 | 1<br>4 5 6 | 3<br>4 5 6  | 8                               |
| 7           | 1           | 4<br>3        | 6<br>9        | 8            | 4 5 6 | 4<br>5 6   | 3<br>2      | 3<br>6                          |
| 5           | 4<br>2<br>6 | 8             | 1 2<br>6      | 1 2<br>4     | 3     | 9          | 7           | 1<br>6                          |
| 2 3<br>9    | 5           | 7             | 4             | 2 3<br>6     | 8     | 2 3<br>6   | 1           | 2 3<br>6<br>9                   |
| 1 2 3<br>4  | 8           | 1<br>4        | 3<br>5 6      | 1 2 3<br>5 6 | 9     | 2 3<br>5 6 | 3<br>5 6    | 2 3<br>6                        |
| 1 2 3<br>9  | 2           | 6             | 1 2 3<br>8    | 1 2 3<br>5   | 7     | 2 3<br>5   | 3<br>8 9    | 4                               |

|               |                   |                 |            |          |                 |          |            |                 |
|---------------|-------------------|-----------------|------------|----------|-----------------|----------|------------|-----------------|
| 1<br>4<br>8 9 | 1<br>4 5 6<br>8 9 | 1<br>5 6        | 2 3<br>4 5 | 7        | 1 2 3<br>4 5    | 3<br>8   | 1 2<br>6 4 | 1 2<br>9        |
| 2             | 1<br>4 5 6<br>9   | 1<br>5 6        | 8          | 4 5      | 3<br>4 5        | 3<br>6 4 | 7          | 9               |
| 1<br>4        | 1<br>4            | 1<br>3<br>7 8 9 | 2 3<br>4   | 2 3<br>4 | 6               | 3<br>8   | 5          | 1 2<br>4<br>9   |
| 1<br>7 8      | 1<br>2 5 6<br>7 8 | 1<br>2 5 6<br>8 | 2<br>5     | 9        | 2<br>5<br>7 8   | 4        | 3          | 1 2<br>5        |
| 1<br>7        | 1<br>2 3<br>5     | 9               | 2 3<br>4 5 | 6        | 2 3<br>4 5<br>7 | 1 2<br>5 | 1 2<br>7   | 8               |
| 7 8           | 2 3<br>5          | 4               | 1          | 2 3<br>5 | 2 3<br>5        | 2<br>5   | 2<br>9 7   | 6               |
| 5             | 1 2<br>4          | 1 2<br>8 9      | 7          | 4<br>8   | 2 3<br>4        | 1 2<br>9 | 6          | 1 2<br>4<br>9   |
| 4<br>8 9      | 2<br>4 5 6<br>8 9 | 7               | 4 5<br>9   | 1        | 2<br>4 5<br>8 9 | 2<br>5   | 4<br>9     | 3               |
| 3             | 1 2<br>4          | 1 2<br>9        | 6          | 2<br>4 5 | 2<br>4 5        | 7        | 8          | 1 2<br>4 5<br>9 |

|          |               |          |            |              |            |              |        |                    |
|----------|---------------|----------|------------|--------------|------------|--------------|--------|--------------------|
| 1<br>7   | 6<br>7        | 2<br>6   | 9          | 2<br>7 8     | 1<br>7     | 6<br>5       | 3      | 4<br>1<br>6        |
| 3        | 8             | 4        | 9          | 1<br>7       | 6<br>7     | 2<br>5 6     | 2<br>6 | 1<br>5 6           |
| 1<br>7   | 5 6<br>7      | 2<br>5 6 | 1 2<br>6   | 2 3<br>4 7 8 | 1<br>4     | 2 3<br>6 7 8 | 2<br>6 | 9<br>1<br>6<br>7 8 |
| 2        | 1             | 5        | 4<br>7 8   | 3            | 4<br>7 8   | 6<br>9       | 9      | 6<br>4<br>7        |
| 4<br>7 8 | 6<br>7        | 4<br>6   | 6<br>8     | 5            | 9          | 4<br>7       | 6      | 1                  |
| 4<br>7   | 6             | 9        | 3          | 1<br>4       | 2<br>4     | 6<br>6       | 4 5 6  | 8                  |
| 4 5 6    | 2<br>4 5 6    | 2<br>6   | 4<br>7     | 8            | 9          | 4<br>7       | 2<br>6 | 1                  |
| 9        | 4<br>2 3<br>6 | 7        | 1 2 3<br>4 | 5            | 1 2 3<br>4 | 4<br>8       | 2<br>6 | 4<br>6<br>8        |
| 1<br>8   | 2 3<br>4      | 1<br>8   | 6          | 4<br>7       | 2 3<br>4   | 7            | 5      | 9                  |

|             |          |             |            |             |        |            |              |            |
|-------------|----------|-------------|------------|-------------|--------|------------|--------------|------------|
| 8           | 7<br>5   | 2 3<br>9    | 2 3<br>6   | 2<br>9      | 1      | 4 5 6<br>7 | 4 5 6<br>7 9 | 5 6<br>7 9 |
| 1<br>7      | 5<br>9   | 1 2<br>9    | 4          | 2<br>7      | 8      | 5 6<br>7   | 5 6<br>9     | 3          |
| 4<br>7      | 3<br>9   | 6           | 4<br>7     | 3<br>9      | 5      | 2<br>9     | 8            | 1          |
| 4<br>6      | 3<br>8   | 4 5 6       | 1 2 3<br>6 | 1 2<br>4    | 7      | 9          | 1 2 3<br>5 6 | 5 6        |
| 7           | 3<br>6   | 1           | 9          | 2 3<br>6    | 2<br>6 | 5          | 8            | 2 3<br>6   |
| 2           | 4 5<br>7 | 4 5 6       | 1<br>6     | 3<br>9      | 8      | 4<br>6     | 1<br>5 6     | 3<br>5 6   |
| 5           | 4<br>7   | 8           | 1<br>7     | 6<br>9      | 4<br>7 | 6<br>9     | 4<br>6       | 2          |
| 1<br>4<br>7 | 6<br>3   | 1<br>4<br>7 | 5          | 1<br>4<br>7 | 6<br>2 | 1<br>4     | 1<br>4       | 8          |
| 1<br>4      | 6<br>2   | 1<br>4      | 6<br>8     | 3           | 4      | 6<br>7     | 5 6<br>9     | 9          |

|          |                   |          |          |          |               |          |          |             |
|----------|-------------------|----------|----------|----------|---------------|----------|----------|-------------|
| 7        | 4<br>5            | 2<br>8   | 1        | 2<br>5   | 4<br>8        | 3<br>6   | 3<br>6   | 3<br>9      |
| 6<br>8   | 4<br>8            | 6<br>8   | 9        | 4        | 2<br>6        | 3        | 7        | 5           |
| 1<br>5 6 | 1<br>5 6          | 3        | 5 6<br>9 | 7        | 5 6<br>9      | 6<br>9   | 8        | 2           |
| 6<br>8 9 | 2<br>8 9          | 2<br>8   | 3<br>8 9 | 4        | 5             | 1        | 3<br>6   | 2 3<br>7 8  |
| 3        | 1 2<br>5 6<br>8 9 | 1 2<br>5 | 6<br>8 9 | 1<br>7   | 6<br>7 8 9    | 1<br>6   | 4        | 2<br>5<br>8 |
| 1<br>5 6 | 7                 | 4        | 2        | 1<br>5 6 | 3<br>6        | 1<br>8   | 9        | 3<br>5 8    |
| 2        | 1<br>5            | 7        | 4 5<br>9 | 8        | 1<br>4        | 3<br>5   | 1<br>4   | 6           |
| 1<br>5   | 8<br>9            | 3        | 1<br>5   | 7        | 1<br>5 6<br>9 | 1 2<br>4 | 2<br>5   | 1<br>4      |
| 4        | 1<br>5            | 6        | 5<br>9   | 3        | 1<br>5        | 3<br>9   | 1 2<br>5 | 3<br>5      |

|                 |             |            |          |                   |          |               |            |             |
|-----------------|-------------|------------|----------|-------------------|----------|---------------|------------|-------------|
| 2<br>4 5<br>7 8 | 6           | 4 5<br>7   | 3<br>9   | 1 3<br>7          | 2<br>7 8 | 1 2<br>4      | 2<br>7 8   | 1 2<br>4    |
| 2<br>7 8 9      | 1           | 3<br>7 9   | 2 3<br>6 | 3<br>7            | 4<br>6   | 2<br>7        | 2<br>7 8   | 5<br>6      |
| 2<br>4 7 8      | 2<br>4 7    | 4<br>7     | 1 2<br>6 | 1<br>7            | 5<br>6   | 3<br>9        | 1 2<br>4   | 6<br>9      |
| 2 3<br>4 7      | 2<br>4 7    | 9<br>6     | 6<br>5   | 8<br>1            | 2<br>7   | 2 3<br>9      | 2 3<br>9   |             |
| 2<br>5<br>9     | 2<br>5<br>9 | 1          | 7        | 6<br>9            | 3        | 2<br>5 6<br>9 | 4          | 8           |
| 3<br>5<br>7 9   | 5<br>7 9    | 8          | 2<br>4   | 6<br>4            | 6<br>9   | 2<br>6        | 1 3<br>5 6 | 3<br>6<br>9 |
| 4 5<br>7 9      | 4 5<br>7 9  | 2          | 3<br>4   | 6<br>4 5 6<br>7 9 | 6<br>7 9 | 8             | 1<br>4     | 6<br>9      |
| 1               | 8           | 4 5<br>9   | 4<br>6   | 2                 | 6<br>9   | 4 5 6<br>9    | 5 6        | 7           |
| 6               | 3           | 4 5<br>7 9 | 1<br>4   | 1<br>4 5          | 7 8 9    | 2<br>4 5<br>9 | 2<br>5     | 4<br>9      |

|                 |          |             |              |                 |               |          |             |          |          |
|-----------------|----------|-------------|--------------|-----------------|---------------|----------|-------------|----------|----------|
| 1<br>4 5<br>7 8 | 6        | 1<br>5<br>8 | 2<br>4<br>8  | 2<br>4<br>7 8 9 | 2<br>4<br>7 9 | 1<br>4   | 3<br>4      | 1<br>4   | 1<br>3   |
| 4<br>7          | 3<br>4   | 3<br>9      | 7<br>9       | 4<br>3          | 5<br>1        | 8        | 2           | 6        |          |
| 2               | 4<br>8   | 3<br>1      | 3<br>8       | 3<br>4          | 3<br>4        | 6<br>7 8 | 5<br>1<br>4 | 9        |          |
| 1<br>4 5<br>8   | 7        | 1<br>5<br>8 | 6<br>4       | 2<br>4          | 3<br>9        | 3<br>4   | 6<br>9      | 6<br>8 9 | 5<br>8   |
| 4 5<br>8        | 3<br>2   | 3<br>5<br>8 | 6<br>1       | 4<br>9          | 4 5<br>9      | 4<br>7   | 3<br>6      | 6<br>8 9 | 5<br>7 8 |
| 9               | 4 5      | 3<br>1      | 3<br>5       | 7               | 6             | 8        | 2           | 1<br>4   | 1<br>3   |
| 5<br>7 8        | 5<br>8 9 | 7<br>9      | 6            | 1 2<br>4        | 7<br>8        | 2<br>4 5 | 1<br>7      | 3<br>7 8 | 1 2<br>9 |
| 3<br>6          | 3<br>4   | 9           | 1 2 3<br>7 8 | 2<br>7          | 1<br>6        | 5        | 1 2<br>7 8  |          |          |
| 3<br>5 6<br>7 8 | 1        | 2           | 5<br>8       | 3<br>7 8        | 3<br>7        | 5        | 6<br>7 9    | 6<br>8 9 | 4        |

|                 |            |              |          |            |          |          |                |          |              |
|-----------------|------------|--------------|----------|------------|----------|----------|----------------|----------|--------------|
| 1 3<br>4 7 9    | 2          | 4<br>7 9     | 3<br>5   | 6          | 1<br>4   | 9        | 1 3<br>7 9     | 8        | 1 3<br>4 7   |
| 1 3<br>4 6<br>9 | 1<br>9     | 3<br>4       | 3<br>6   | 8          | 7        | 1<br>4   | 1 2 3<br>5 9   | 1 2<br>4 | 1 2 3<br>4 5 |
| 5               | 1<br>7 8 9 | 4<br>7 8 9   | 1 3<br>4 | 1 3<br>4   | 2        | 1<br>7 9 | 6              | 1<br>4   | 3<br>7       |
| 2 3<br>4 7 8 9  | 3<br>7 8 9 | 2 3<br>7 8 9 | 6<br>7   | 1<br>4     | 9        | 8 9      | 1 2 3<br>7 8 9 | 5        | 1 2 3<br>6   |
| 3<br>7 8 9      | 6          | 3<br>7 8 9   | 2        | 5          | 1<br>8 9 | 4        | 1<br>9         | 1<br>7   | 3            |
| 2<br>4 7 8 9    | 5          | 1            | 7<br>6   | 4<br>9     | 3        | 7 8 9    | 9              | 7        | 6            |
| 1 2<br>7 8      | 1<br>7 8   | 2<br>7 8     | 9        | 1 2<br>4   | 8        | 6        | 1 2<br>5       | 3<br>4 5 |              |
| 1 2 3<br>6 9    | 4          | 2 3<br>6     | 1 3<br>9 | 1 2 3<br>5 | 7        | 8        | 1 2<br>6       | 7        | 8            |
| 1 2 3<br>6 8    | 1<br>8     | 3<br>5       | 1 3<br>4 | 1 2 3<br>4 | 8        | 7        | 1 2<br>6       | 1 2<br>4 | 9            |

|            |        |             |          |            |            |          |            |              |              |                 |
|------------|--------|-------------|----------|------------|------------|----------|------------|--------------|--------------|-----------------|
| 1 2<br>4 7 | 6<br>9 | 2<br>6<br>9 | 3        | 1<br>4     | 1 2<br>4   | 6<br>7   | 1 2<br>6   | 1 2<br>4 5 6 | 1 2<br>4 5 8 | 1<br>4 5<br>8 9 |
| 1 2<br>6 9 | 5      | 2<br>9      | 8        | 1<br>4     | 1 2 3<br>6 | 5        | 1 2<br>4   | 1 2 3<br>6   | 7            |                 |
| 8          | 7      | 4           | 1<br>9   | 1 2 3<br>6 | 5          | 1 2<br>6 | 1 2 3<br>9 | 1<br>3       |              |                 |
| 2 3<br>5   | 2<br>4 | 2<br>5      | 1<br>4 5 | 1<br>4     | 3<br>8     | 7<br>9   | 6          | 7            | 9            | 6               |
| 3<br>5 6   | 1      | 8           | 4 5<br>7 | 9          | 3<br>6     | 2<br>4 5 | 2 3<br>4 5 | 4 5          | 3            |                 |
| 3<br>5 6 4 | 6<br>9 | 5<br>7 9    | 2        | 4<br>7     | 3<br>6     | 3<br>7   | 1<br>4 5   | 1<br>4 5     | 3<br>4 5     | 1<br>3          |
| 5<br>7 9   | 8      | 6           | 3        | 1<br>7     | 5<br>7     | 1<br>7 9 | 4 5<br>9   | 1<br>4 5     | 2            |                 |
| 4          | 3      | 1           | 6        | 2<br>7     | 5<br>7     | 2<br>9   | 5<br>8 9   | 5<br>7 8     | 5<br>8 9     |                 |
| 2<br>5     | 2<br>9 | 2<br>9      | 5<br>7 9 | 8          | 1<br>7     | 5<br>4   | 3          | 6            | 1<br>5       | 9               |

|              |              |              |        |            |                |          |            |               |                   |
|--------------|--------------|--------------|--------|------------|----------------|----------|------------|---------------|-------------------|
| 2            | 5<br>8 9     | 5<br>8       | 3      | 6<br>7 8 9 | 5 6<br>8 9     | 1        | 6<br>7 8 9 | 4             |                   |
| 1 3<br>4 9   | 1<br>4       | 6<br>8 9     | 1<br>7 | 1<br>7 8 9 | 1<br>8 9       | 5        | 3<br>7 8 9 | 2             |                   |
| 1 3<br>4 5 9 | 7            | 1 3<br>4 5 8 | 2      | 1<br>8 9   | 6 4 5 6<br>8 9 | 8 9      | 3<br>6     | 6<br>8 9      |                   |
| 8            | 1 4 5 6<br>9 | 1 4 5        | 1<br>7 | 1<br>7     | 6              | 2        | 3 4 5<br>9 | 1<br>7 9      | 5<br>9            |
| 1 3<br>5 9   | 1 2<br>5     | 1 2 3<br>5   | 1<br>7 | 5          | 4              | 1 3<br>8 | 6          | 2<br>5        | 1<br>5 6<br>7 8 9 |
| 7            | 1 2<br>4 5 6 | 1 2 3<br>4 5 | 9      | 1 3<br>6   | 1 3<br>6       | 2<br>4   | 2<br>4 5   | 1<br>5        | 8                 |
| 1<br>4       | 1 2<br>4     | 1 2<br>4     | 6      | 5          | 1 3<br>9       | 4<br>7   | 2<br>9     | 2 3<br>9      | 3                 |
| 4 5 6        | 2<br>4 5     | 2<br>4 5     | 8      | 2 3<br>9   | 3<br>9         | 4<br>7   | 2<br>9     | 1<br>5 6<br>9 |                   |
| 1<br>5 6     | 3            | 9            | 4      | 1 2<br>7   | 7              | 2<br>8   | 2<br>5 6   | 5 6<br>8      |                   |

|            |            |            |          |          |          |        |        |        |  |
|------------|------------|------------|----------|----------|----------|--------|--------|--------|--|
| 2          | 4<br>6 9   | 1<br>4     | 3<br>9   | 1<br>6   | 8        | 7      | 5      | 1<br>9 |  |
| 1<br>4 5   | 4 5<br>9   | 3          | 4 5<br>7 | 1<br>9   | 5<br>7   | 2      | 6      | 8      |  |
| 1<br>5 6   | 7          | 1<br>8 9   | 5<br>9   | 1<br>5 6 | 2        | 1<br>9 | 3      | 4      |  |
| 1<br>4 5   | 2<br>4 5   | 6          | 5<br>8 9 | 1<br>8   | 7        | 3      | 1<br>4 | 2<br>5 |  |
| 1 3<br>5 9 | 3<br>5     | 1<br>9     | 2<br>5   | 1<br>5   | 3<br>9   | 6      | 8      | 7      |  |
| 1 3<br>4 5 | 8          | 1 2<br>4 5 | 6        | 1 3<br>5 | 1 3<br>5 | 1<br>9 | 1<br>4 | 2<br>5 |  |
| 3<br>5 6   | 2 3<br>5 6 | 2<br>5     | 3<br>7 8 | 2 3<br>5 | 3<br>7 8 | 4      | 1<br>9 | 1<br>9 |  |
| 4 5<br>7 8 | 3<br>4 5   | 2<br>4 5   | 1<br>7 8 | 9<br>4 5 | 3<br>7 8 | 1      | 2<br>5 | 6      |  |
| 9          | 1          | 2<br>4 5   | 7 8      | 2<br>5   | 6        | 5<br>8 | 2<br>7 | 3      |  |



|                  |                  |                |                  |                  |                  |                  |                |                  |              |
|------------------|------------------|----------------|------------------|------------------|------------------|------------------|----------------|------------------|--------------|
| 2                | 9                | 5              | <sup>7 8</sup>   | <sup>7 8</sup>   | 3                | <sup>1 4</sup>   | <sup>1 4</sup> | <sup>1</sup>     | 6            |
| 3                | <sup>4 8</sup>   | <sup>4 8</sup> | 1                | 6                | <sup>2 5</sup>   | 7                | <sup>2 5</sup> | <sup>2 5</sup>   | <sup>9</sup> |
| 7                | 1                | 6              | 9                | <sup>2 5</sup>   | 4                | <sup>2 5</sup>   | 3              | 8                |              |
| <sup>4 5 6</sup> | 2                | <sup>4 3</sup> | <sup>5 6</sup>   | <sup>1 5</sup>   | <sup>1 5 6</sup> | 8                | 7              | <sup>1 5 6</sup> | <sup>9</sup> |
| 1                | <sup>5 6</sup>   | <sup>7 8</sup> | 4                | <sup>2 5</sup>   | <sup>2 5 6</sup> | <sup>2 5 6</sup> | <sup>2 5</sup> | 3                |              |
| <sup>5 6</sup>   | <sup>5 6</sup>   | <sup>3</sup>   | <sup>2 5 6</sup> | <sup>1 2 3</sup> | <sup>1 2</sup>   | <sup>1 2</sup>   | <sup>1 2</sup> | <sup>1 2</sup>   | <sup>6</sup> |
| 8                | <sup>4 5 6</sup> | <sup>1 4</sup> | <sup>2 5 6</sup> | <sup>1 2</sup>   | <sup>1 2</sup>   | <sup>3 5 6</sup> | 3              | <sup>1 2</sup>   | 7            |
| <sup>5 6</sup>   | <sup>5 6</sup>   | <sup>1 7</sup> | 3                | 9                | <sup>1 2</sup>   | <sup>1 2</sup>   | 8              | 4                |              |
| <sup>4 5</sup>   | 3                | 2              | <sup>7 8</sup>   | <sup>1 4 5</sup> | <sup>1 5</sup>   | <sup>1 5</sup>   | 6              | <sup>1 5</sup>   | <sup>9</sup> |

|                |                |                  |                |                  |                |                  |                    |                    |                    |
|----------------|----------------|------------------|----------------|------------------|----------------|------------------|--------------------|--------------------|--------------------|
| <sup>5 6</sup> | 8              | 9                | <sup>1 3</sup> | 2                | <sup>1 3</sup> | <sup>1 3</sup>   | <sup>1 3</sup>     | <sup>1 3</sup>     | <sup>1 3</sup>     |
| 2              | <sup>1 3</sup> | <sup>1 3</sup>   | 4              | <sup>1 3</sup>   | 9              | 5                | <sup>1 3</sup>     | 8                  |                    |
| <sup>5 6</sup> | <sup>1 3</sup> | <sup>1 3</sup>   | 8              | <sup>1 3</sup>   | <sup>1 3</sup> | 9                | <sup>1 3</sup>     | 2                  |                    |
| 1              | 6              | 2                | 9              | 8                | 7              | 4                | <sup>5 3</sup>     | <sup>5 3</sup>     |                    |
| 3              | <sup>4 7</sup> | <sup>4 7</sup>   | 5              | <sup>1 6</sup>   | 2              | <sup>1 6</sup>   | 8                  | 9                  |                    |
| 9              | 5              | 8                | <sup>1 3</sup> | <sup>1 3</sup>   | <sup>1 3</sup> | <sup>1 3</sup>   | 2                  | <sup>1 6</sup>     |                    |
| 7              | 9              | <sup>1 5 6</sup> | 2              | <sup>1 4 5</sup> | 8              | 3                | <sup>1 4 5 6</sup> | <sup>1 4 5 6</sup> |                    |
| 4              | 2              | <sup>1 5</sup>   | 6              | <sup>1 5</sup>   | <sup>1 5</sup> | 8                | 9                  | <sup>1 5</sup>     |                    |
| 8              | <sup>1 3</sup> | <sup>1 3</sup>   | <sup>1 3</sup> | <sup>1 3</sup>   | 9              | <sup>1 4 5</sup> | 2                  | <sup>1 4 5 6</sup> | <sup>1 4 5 6</sup> |

|                    |                  |                  |                |                |                |                |                  |                    |   |
|--------------------|------------------|------------------|----------------|----------------|----------------|----------------|------------------|--------------------|---|
| <sup>1</sup>       | 5                | 3                | <sup>4 6</sup> | <sup>2 6</sup> | 2              | <sup>1 4</sup> | <sup>1 2</sup>   | <sup>2</sup>       |   |
| <sup>1</sup>       | 7                | 6                | 5              | <sup>2 4</sup> | 2              | <sup>1 3</sup> | <sup>1 2 3</sup> | <sup>2 3</sup>     |   |
| <sup>2</sup>       | 8                | <sup>2 4</sup>   | <sup>3</sup>   | <sup>3</sup>   | 1              | 5              | 6                | 9                  |   |
| <sup>2 4 5 6</sup> | <sup>2 6</sup>   | 1                | <sup>3</sup>   | <sup>3</sup>   | <sup>3</sup>   | <sup>4 6</sup> | 4                | 5                  | 8 |
| <sup>3</sup>       | <sup>4</sup>     | 8                | 1              | 5              | 6              | 2              | <sup>4 3</sup>   | <sup>4 3</sup>     |   |
| <sup>3</sup>       | <sup>6 5</sup>   | 2                | 8              | 4              | <sup>1 3</sup> | <sup>1 3</sup> | <sup>5 6</sup>   | <sup>3</sup>       |   |
| <sup>2 4 5 6</sup> | 3                | <sup>2 4 5</sup> | 8              | 1              | 5              | 7              | <sup>2 4 5</sup> | <sup>2 4 5 6</sup> |   |
| <sup>2 4 5 6</sup> | 1                | 7                | 9              | <sup>2 3</sup> | <sup>2 3</sup> | <sup>3 4</sup> | 8                | <sup>2 3</sup>     |   |
| 8                  | <sup>2 4 6</sup> | <sup>2 4 5</sup> | <sup>2 3</sup> | <sup>2 3</sup> | <sup>3 4</sup> | <sup>3 4</sup> | <sup>2 3</sup>   | 1                  |   |

|                |                  |                |                  |                  |                  |                |                |                |  |
|----------------|------------------|----------------|------------------|------------------|------------------|----------------|----------------|----------------|--|
| <sup>1</sup>   | <sup>2 6</sup>   | 7              | <sup>1 2</sup>   | <sup>1 2</sup>   | <sup>1 2</sup>   | 3              | 5              | <sup>2 6</sup> |  |
| <sup>1 3</sup> | <sup>2 5 6</sup> | <sup>1 3</sup> | <sup>1 2 3</sup> | 7                | 8                | <sup>2 6</sup> | <sup>4 6</sup> | <sup>2 6</sup> |  |
| <sup>3</sup>   | <sup>2 5 6</sup> | <sup>3 4</sup> | <sup>2 3</sup>   | <sup>2 3</sup>   | <sup>2 3</sup>   | 7              | <sup>4 6</sup> | 1              |  |
| 9              | 1                | 8              | <sup>6 4</sup>   | <sup>2 3</sup>   | <sup>2 3</sup>   | 5              | 7              | <sup>4 3</sup> |  |
| 6              | 4                | 2              | <sup>1 3</sup>   | <sup>1 3</sup>   | <sup>1 3</sup>   | <sup>1</sup>   | <sup>1 3</sup> | <sup>3</sup>   |  |
| 7              | 3                | 5              | <sup>1</sup>     | <sup>9</sup>     | <sup>1 4</sup>   | <sup>1 8</sup> | 2              | <sup>4 6</sup> |  |
| 4              | <sup>5 6</sup>   | 9              | <sup>1 2 3</sup> | 8                | <sup>1 2 3</sup> | <sup>1 2</sup> | <sup>1 3</sup> | <sup>2 3</sup> |  |
| <sup>1 3</sup> | 7                | <sup>1 3</sup> | <sup>1 2 3</sup> | <sup>1 2 3</sup> | 6                | 4              | <sup>1 3</sup> | <sup>2 3</sup> |  |
| 2              | <sup>5 6</sup>   | <sup>1 3</sup> | <sup>1 3</sup>   | <sup>1 3</sup>   | <sup>1 3</sup>   | <sup>1 3</sup> | <sup>1 3</sup> | 7              |  |

|                |                  |                  |                |                  |                |                    |                    |                  |              |
|----------------|------------------|------------------|----------------|------------------|----------------|--------------------|--------------------|------------------|--------------|
| 5              | <sup>3 6</sup>   | <sup>3 6</sup>   | 2              | 8                | <sup>4 9</sup> | <sup>1 4</sup>     | 7                  | <sup>1 4</sup>   | <sup>9</sup> |
| <sup>7 8</sup> | <sup>1 7</sup>   | <sup>1 7 8</sup> | 6              | <sup>4 9</sup>   | 3              | <sup>4 5</sup>     | 2                  | <sup>4 5</sup>   | <sup>9</sup> |
| 2              | 9                | 4                | 5              | 1                | 7              | <sup>3 8</sup>     | <sup>3 8</sup>     | 6                |              |
| 9              | 4                | <sup>2 5 6</sup> | 3              | <sup>2 5</sup>   | 8              | <sup>1 2</sup>     | <sup>1 5 6</sup>   | 7                |              |
| <sup>3 6</sup> | <sup>2 3</sup>   | <sup>2 3</sup>   | 1              | <sup>2 4 5</sup> | <sup>4 9</sup> | <sup>2 3</sup>     | <sup>3 4 5 6</sup> | <sup>4 5</sup>   | <sup>9</sup> |
| 1              | <sup>2 3</sup>   | <sup>2 3</sup>   | <sup>4 7</sup> | <sup>2 4 5</sup> | 6              | <sup>2 3</sup>     | <sup>4 5</sup>     | 8                |              |
| <sup>4 6</sup> | <sup>1 5 6</sup> | <sup>1 5 6</sup> | 8              | 3                | 2              | 7                  | 9                  | <sup>1 4 5</sup> |              |
| <sup>4 7</sup> | 8                | <sup>2 3</sup>   | 9              | <sup>4 7</sup>   | 1              | <sup>2 4 5 6</sup> | <sup>4 5 6</sup>   | <sup>4 5</sup>   | <sup>2</sup> |
| <sup>4 7</sup> | <sup>1 2</sup>   | 9                | <sup>4 7</sup> | 6                | 5              | <sup>1 2</sup>     | <sup>1 8</sup>     | 3                |              |

|                  |                  |                |                  |                    |                  |                    |                    |                    |                |
|------------------|------------------|----------------|------------------|--------------------|------------------|--------------------|--------------------|--------------------|----------------|
| <sup>4 5</sup>   | <sup>3 8 9</sup> | 7              | 6                | <sup>2 3</sup>     | <sup>4 5</sup>   | <sup>2 3</sup>     | <sup>2 3</sup>     | <sup>5 8</sup>     | 1              |
| <sup>4 5</sup>   | <sup>3 8 9</sup> | <sup>5 9</sup> | 1                | <sup>2 3</sup>     | <sup>4 5</sup>   | <sup>2 3</sup>     | <sup>6 7</sup>     | <sup>6 8</sup>     | <sup>2 3</sup> |
| <sup>5 8</sup>   | <sup>5 3</sup>   | 2              | <sup>1 7</sup>   | <sup>1 7</sup>     | 6                | 9                  | 4                  | <sup>5 8</sup>     | <sup>3</sup>   |
| <sup>2 7</sup>   | <sup>2 5 6</sup> | 9              | <sup>4 7</sup>   | <sup>4 6</sup>     | 1                | <sup>2 4 5</sup>   | 3                  | <sup>2 4 5 8</sup> |                |
| <sup>1 2 3</sup> | <sup>2 3</sup>   | <sup>3</sup>   | 5                | <sup>4 7 8</sup>   | <sup>4 8 9</sup> | <sup>1 2</sup>     | <sup>1 7 8 9</sup> | 6                  |                |
| <sup>1 3</sup>   | <sup>5 6</sup>   | 4              | <sup>5 7 8</sup> | <sup>3 6 9</sup>   | 2                | <sup>1 5</sup>     | <sup>5 7 8 9</sup> | <sup>5 8 9</sup>   |                |
| <sup>5 9</sup>   | 8                | <sup>4 5</sup> | <sup>3 4</sup>   | <sup>1 4 5 6</sup> | <sup>4 5</sup>   | <sup>4 5 6</sup>   | <sup>5 6</sup>     | 7                  |                |
| <sup>5 6</sup>   | 1                | <sup>4 5</sup> | <sup>3 4</sup>   | 9                  | <sup>4 5</sup>   | 8                  | 2                  | <sup>4 5</sup>     | <sup>3</sup>   |
| <sup>2 5</sup>   | <sup>2 5 6</sup> | <sup>4 5</sup> | 8                | 3                  | 7                | <sup>1 4 5 6</sup> | <sup>1 5 6</sup>   | <sup>4 5</sup>     | <sup>9</sup>   |

|            |            |            |            |          |            |            |          |          |
|------------|------------|------------|------------|----------|------------|------------|----------|----------|
| 2 3<br>8   | 4          | 7 8<br>3   | 1 2<br>7   | 1 2<br>6 | 2 3<br>7   | 9          | 3 6<br>7 | 5        |
| 1          | 3<br>7     | 6          | 8 9        | 8 9      | 5          | 2 3<br>4   | 3<br>4   | 2 3<br>7 |
| 9          | 2 3<br>5   | 3<br>5     | 4          | 2<br>6   | 2 3<br>6   | 1          | 3<br>6   | 8        |
| 2 3<br>8   | 2 3<br>9   | 4<br>8 9   | 6          | 2<br>8 9 | 4<br>7 8 9 | 2 3<br>4   | 5        | 1        |
| 7          | 1          | 4 5<br>8 9 | 2<br>8 9   | 2<br>8 9 | 4<br>8 9   | 2 3<br>4   | 3<br>8 9 | 2 3<br>6 |
| 2 5 6<br>8 | 2 5 6<br>9 | 4 5<br>8 9 | 2<br>7 8 9 | 3<br>5   | 1          | 2<br>4     | 7 8 9    | 7        |
| 3<br>5 6   | 8          | 7 9        | 1 2<br>5   | 4        | 2<br>6     | 3 1<br>5 6 | 3<br>7   | 3<br>6   |
| 4          | 3<br>5 6   | 1          | 5<br>8     | 7        | 6<br>8     | 5 6<br>8   | 2        | 9        |
| 5 6<br>7   | 2          | 3          | 1<br>5 6   | 8 9      | 6<br>8 9   | 5 6<br>7 8 | 1<br>7 8 | 4        |

|            |              |          |            |          |            |            |              |                |
|------------|--------------|----------|------------|----------|------------|------------|--------------|----------------|
| 3 1<br>8 9 | 4<br>8 9     | 2        | 1 3<br>4 6 | 1<br>9   | 5          | 1 4<br>8   | 1 4<br>8     | 7              |
| 5<br>7 8 9 | 4 5<br>7 8 9 | 6        | 1<br>4     | 1<br>7   | 1<br>7 8   | 1 2<br>4 5 | 1 2<br>4 5   | 3              |
| 3<br>5     | 1<br>4 5     | 5        | 1 2 3<br>4 | 1 2<br>7 | 1 2<br>7 8 | 6          | 9            | 4 5<br>8       |
| 5<br>8 9   | 5<br>8 9     | 7        | 1 2        | 4        | 3          | 1 2        | 6            | 5<br>8         |
| 6          | 2            | 4 5<br>8 | 1<br>7     | 5        | 9          | 1<br>7 8   | 1 4 5<br>7 8 | 3 1 4 5<br>8 8 |
| 1          | 3            | 4 5<br>8 | 2<br>7     | 5 6      | 2<br>7 8   | 2<br>7 8   | 2<br>7 8     | 9              |
| 5<br>7 8   | 6            | 9        | 1<br>4 5   | 1<br>7   | 5          | 1<br>4     | 3<br>4 5     | 3<br>4 5       |
| 2          | 5<br>7       | 3        | 8          | 5 6<br>7 | 4<br>7     | 6<br>9     | 4 5<br>9     | 1              |
| 4          | 5<br>8       | 1        | 2<br>5     | 3<br>9   | 2          | 5<br>8 9   | 7            | 6              |

|            |            |              |              |            |          |          |        |          |
|------------|------------|--------------|--------------|------------|----------|----------|--------|----------|
| 1 2 3<br>5 | 2 3<br>5 6 | 1 2 3<br>5 6 | 1 2 3<br>4 7 | 3<br>4 5 6 | 8        | 5 6<br>7 | 9      | 5 6<br>7 |
| 8          | 7          | 3<br>5 6     | 3<br>6       | 3<br>5 6   | 5        | 4        | 2      | 1        |
| 1 2<br>5   | 2<br>5 6   | 4            | 1 2<br>6     | 5 6<br>7   | 1<br>5   | 3        | 8      | 5 6<br>7 |
| 3<br>7 9   | 4          | 3<br>7 9     | 8            | 2          | 1 3<br>7 | 1<br>6   | 5      | 6<br>7 9 |
| 6          | 1          | 5<br>9       | 7            | 5<br>9     | 4        | 2        | 3      | 8        |
| 2 3<br>5   | 8          | 2 3<br>5     | 1 3<br>6     | 3<br>5 6   | 1 3<br>5 | 1<br>4   | 3<br>4 | 7 9      |
| 1<br>4 5   | 5          | 1<br>5       | 4<br>7       | 3<br>8     | 1<br>5   | 6        | 2      |          |
| 4 5<br>7   | 3<br>5 6   | 3<br>5 6     | 9            | 1          | 2        | 8        | 4<br>7 | 4 5<br>7 |
| 1 2<br>4   | 2          | 8            | 5            | 4<br>7     | 6        | 1<br>4   | 1<br>4 | 3        |

|   |          |   |        |              |            |          |          |        |
|---|----------|---|--------|--------------|------------|----------|----------|--------|
| 4 | 5<br>9   | 6 | 1<br>9 | 1 3<br>5 9   | 1 3<br>5 9 | 8        | 1 3<br>7 | 2      |
| 2 | 5<br>8 9 | 7 | 4      | 1 3<br>5 8 9 | 1<br>9     | 3 1<br>9 | 3<br>9   | 6      |
| 3 | 8 9      | 1 | 2      | 6<br>8 9     | 6<br>7 9   | 4        | 5        |        |
| 6 | 4        | 9 | 8      | 7            | 5          | 2        | 5 3<br>1 |        |
| 5 | 1<br>7   | 2 | 6      | 1 3<br>4     | 1 3<br>4   | 3<br>4 7 | 8        | 9      |
| 8 | 1<br>7   | 3 | 1<br>9 | 1 2<br>5 9   | 1 2<br>4 5 | 6        | 5<br>7   | 4<br>7 |
| 7 | 6        | 4 | 3      | 1<br>9       | 1<br>9     | 5        | 2        | 8      |
| 1 | 3        | 8 | 5      | 2<br>6       | 2<br>6     | 4<br>7   | 9        | 4<br>7 |
| 9 | 2        | 5 | 7      | 4            | 8          | 1        | 6        | 3      |

|                 |             |               |               |             |                  |             |                  |             |
|-----------------|-------------|---------------|---------------|-------------|------------------|-------------|------------------|-------------|
| 8               | 1<br>4<br>7 | 5             | 1<br>4<br>6   | 6<br>9      | 1<br>4<br>6<br>9 | 3           | 1<br>4<br>6      | 2           |
| 6               | 1<br>4<br>7 | 1 2<br>4<br>7 | 1 2<br>4<br>8 | 3           | 5                | 4<br>7<br>9 | 1<br>4<br>9      | 4<br>7<br>8 |
| 1 2 3<br>4<br>7 | 1<br>4<br>7 | 3<br>9        | 1 2<br>4<br>8 | 2<br>6<br>8 | 1<br>4<br>6<br>7 | 5           | 1<br>4<br>6      | 4<br>7<br>8 |
| 1<br>4<br>7     | 8           | 1<br>4<br>7   | 3             | 1<br>4      | 2                | 6           | 5                | 9           |
| 4<br>9          | 3<br>9      | 6<br>9        | 4<br>6        | 5           | 7                | 4<br>6<br>9 | 8                | 2<br>1      |
| 1 2<br>9        | 5           | 1 2<br>6      | 1<br>8        | 6<br>8<br>9 | 1<br>6<br>9      | 4<br>7      | 3                | 4<br>7      |
| 5               | 1<br>4<br>7 | 3<br>4<br>7   | 9             | 1<br>4      | 8                | 2           | 4<br>7           | 6           |
| 1<br>4<br>9     | 2           | 1<br>4<br>8   | 6<br>7        | 5           | 1<br>4<br>6      | 4<br>9      | 4<br>8<br>9      | 3           |
| 4<br>7<br>9     | 6<br>9      | 4<br>7<br>8   | 6<br>4        | 2<br>6      | 3                | 1           | 4<br>7<br>8<br>9 | 5           |

|                |            |          |            |            |            |          |          |          |   |   |
|----------------|------------|----------|------------|------------|------------|----------|----------|----------|---|---|
| 1              | 3<br>7     | 2        | 5          | 4<br>7     | 3<br>4     | 3<br>9   | 6        | 4<br>7   | 9 | 8 |
| 3<br>7 8 9     | 3<br>7 8 9 | 4        | 2          | 1 3<br>7   | 1 3<br>6   | 3<br>9   | 5        | 1 3<br>7 | 3 |   |
| 3<br>7 9       | 5          | 3<br>7 9 | 8          | 1 3<br>4   | 1 3<br>6 4 | 2 3<br>9 | 2<br>9   | 1 3<br>7 | 3 |   |
| 2              | 4          | 1        | 6          | 9          | 7          | 8        | 3        | 5        |   |   |
| 5<br>7 8       | 3<br>7 8   | 5<br>7 8 | 1          | 4<br>8     | 4<br>8     | 2        | 2<br>9   | 6        |   |   |
| 6              | 3<br>8 9   | 3<br>8 9 | 2          | 5          | 7          | 1        | 4        |          |   |   |
| 3 1 2<br>5 8   | 5<br>8     | 7        | 1 3<br>4 5 | 1 2 3<br>4 | 3<br>8     | 4<br>6   | 6        | 9        |   |   |
| 4              | 3<br>7 8   | 3<br>7 8 | 9          | 5 6<br>8   | 3<br>8     | 1        | 7 8      | 2        |   |   |
| 3 1 2<br>7 8 9 | 3<br>7 8 9 | 6 4<br>8 | 3 1<br>4   | 3 1<br>6 4 | 1 2 3<br>8 | 5        | 4<br>7 8 | 3        |   |   |

|                             |                             |                             |                               |                             |                                 |                                   |                                 |                               |
|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------|---------------------------------|-----------------------------------|---------------------------------|-------------------------------|
| 1                           | <sup>4</sup> <sub>8 9</sub> | <sup>2</sup> <sub>4 7</sub> | 6                             | <sup>3</sup> <sub>8 9</sub> | <sup>2</sup> <sub>7 8 9</sub>   | <sup>4</sup> <sub>8 9</sub>       | <sup>3</sup> <sub>4 7 8</sub>   | 5                             |
| <sup>2</sup> <sub>7 9</sub> | 3                           | 5                           | <sup>2</sup> <sub>7 8 9</sub> | 1                           | 4                               | <sup>8</sup> <sub>9</sub>         | 6                               | <sup>7</sup> <sub>9</sub>     |
| <sup>6</sup> <sub>7 9</sub> | <sup>4</sup> <sub>8 9</sub> | <sup>4</sup> <sub>7</sub>   | <sup>5</sup> <sub>7 8 9</sub> | <sup>8</sup> <sub>9</sub>   | <sup>5</sup> <sub>7 8 9</sub>   | <sup>1</sup> <sub>4 8 9</sub>     | <sup>3</sup> <sub>1 4 7 8</sub> | 2                             |
| <sup>5</sup> <sub>7 9</sub> | <sup>4</sup> <sub>9</sub>   | 8                           | <sup>1</sup> <sub>4 5 7</sub> | <sup>4</sup> <sub>6 9</sub> | 3                               | <sup>1</sup> <sub>4 6</sub>       | 2                               | <sup>1</sup> <sub>4 6 7</sub> |
| <sup>5</sup> <sub>7</sub>   | <sup>6</sup> <sub>2</sub>   | <sup>4</sup> <sub>7</sub>   | <sup>1</sup> <sub>4 5 7</sub> | <sup>4</sup> <sub>8 6</sub> | <sup>1</sup> <sub>5 6 7 8</sub> | <sup>1</sup> <sub>4 8</sub>       | 9                               | 3                             |
| <sup>3</sup> <sub>7 9</sub> | <sup>6</sup> <sub>1</sub>   | <sup>4</sup> <sub>7</sub>   | <sup>4</sup> <sub>7 8 9</sub> | 2                           | <sup>6</sup> <sub>7 8 9</sub>   | 5                                 | <sup>4</sup> <sub>7 8</sub>     | <sup>4</sup> <sub>6 7</sub>   |
| 4                           | 6                           | 9                           | 3                             | 7                           | <sup>1</sup> <sub>2</sub>       | <sup>1</sup> <sub>2</sub>         | 5                               | 8                             |
| <sup>2</sup> <sub>3</sub>   | 7                           | <sup>1</sup> <sub>2 3</sub> | <sup>1</sup> <sub>2 4</sub>   | 5                           | <sup>1</sup> <sub>6 8 9</sub>   | <sup>1</sup> <sub>2 3 4 6 9</sub> | <sup>1</sup> <sub>3 4 6 9</sub> |                               |
| 8                           | 5                           | <sup>1</sup> <sub>2 3</sub> | <sup>1</sup> <sub>2 4</sub>   | <sup>4</sup> <sub>6 9</sub> | <sup>1</sup> <sub>2 6 9</sub>   | 7                                 | <sup>1</sup> <sub>3 4</sub>     | <sup>1</sup> <sub>4 6 9</sub> |

|                             |                                       |                                   |                           |                             |                             |                                   |                               |                               |
|-----------------------------|---------------------------------------|-----------------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------------|-------------------------------|-------------------------------|
| 8                           | 9                                     | 1                                 | <sup>2</sup> <sub>4</sub> | 3                           | <sup>4</sup> <sub>5</sub>   | <sup>2</sup> <sub>5 7</sub>       | <sup>5</sup> <sub>6 7</sub>   | <sup>2</sup> <sub>5 6 7</sub> |
| 6                           | 7                                     | 3                                 | <sup>2</sup> <sub>9</sub> | 1                           | <sup>5</sup> <sub>9</sub>   | <sup>2</sup> <sub>5</sub>         | 8                             | 4                             |
| 5                           | <sup>2</sup> <sub>4</sub>             | <sup>2</sup> <sub>4</sub>         | 6                         | 7                           | 8                           | 9                                 | 3                             | 1                             |
| 1                           | <sup>4</sup> <sub>5</sub>             | <sup>4</sup> <sub>7 9</sub>       | 8                         | 6                           | 3                           | <sup>4</sup> <sub>5 7</sub>       | 2                             | <sup>5</sup> <sub>7 9</sub>   |
| <sup>2</sup> <sub>4 7</sub> | <sup>2</sup> <sub>3 4 5 6 7 8 9</sub> | <sup>2</sup> <sub>4 6 7 8 9</sub> | 1                         | <sup>4</sup> <sub>5 9</sub> | <sup>2</sup> <sub>4 9</sub> | <sup>3</sup> <sub>4 5 7 8 9</sub> | <sup>5</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>9</sub>     |
| <sup>2</sup> <sub>4 9</sub> | <sup>2</sup> <sub>3 4 5</sub>         | <sup>2</sup> <sub>4 8 9</sub>     | 7                         | <sup>4</sup> <sub>5 9</sub> | <sup>2</sup> <sub>4 9</sub> | 6                                 | 1                             | <sup>5</sup> <sub>8 9</sub>   |
| <sup>2</sup> <sub>7</sub>   | 8                                     | <sup>2</sup> <sub>5 6 7</sub>     | <sup>4</sup> <sub>9</sub> | <sup>4</sup> <sub>9 7</sub> | <sup>1</sup> <sub>7</sub>   | <sup>1</sup> <sub>2 3 5</sub>     | <sup>5</sup> <sub>6</sub>     | <sup>2</sup> <sub>3 5 6</sub> |
| <sup>4</sup> <sub>9</sub>   | 1                                     | <sup>4</sup> <sub>5 9</sub>       | 3                         | 2                           | 6                           | <sup>4</sup> <sub>5 8</sub>       | 7                             | <sup>5</sup> <sub>8 9</sub>   |
| 3                           | <sup>2</sup> <sub>4 6 7</sub>         | <sup>2</sup> <sub>4 6 7 9</sub>   | 5                         | 8                           | <sup>1</sup> <sub>7</sub>   | <sup>1</sup> <sub>2 4</sub>       | <sup>4</sup> <sub>9</sub>     | <sup>2</sup> <sub>6 9</sub>   |

|                             |                               |                                 |                                   |                               |                             |                               |                               |                             |
|-----------------------------|-------------------------------|---------------------------------|-----------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------|
| 6                           | <sup>1</sup> <sub>5 8</sub>   | <sup>3</sup> <sub>1 5</sub>     | 7                                 | <sup>4</sup> <sub>5</sub>     | <sup>1</sup> <sub>4 8</sub> | 2                             | <sup>1</sup> <sub>4 8</sub>   | 9                           |
| <sup>3</sup> <sub>5 9</sub> | 2                             | 7                               | <sup>1</sup> <sub>5 6 4</sub>     | <sup>4</sup> <sub>5 6 9</sub> | <sup>1</sup> <sub>8</sub>   | <sup>1</sup> <sub>6 8</sub>   | <sup>4</sup> <sub>3</sub>     |                             |
| 4                           | <sup>1</sup> <sub>8</sub>     | <sup>3</sup> <sub>1 9</sub>     | 2                                 | <sup>6</sup> <sub>9</sub>     | <sup>1</sup> <sub>7 8</sub> | 5                             | <sup>3</sup> <sub>7</sub>     |                             |
| <sup>1</sup> <sub>2</sub>   | <sup>4</sup> <sub>6 4</sub>   | <sup>4</sup> <sub>6</sub>       | 3                                 | 8                             | <sup>1</sup> <sub>7</sub>   | <sup>5</sup> <sub>7 9</sub>   | <sup>2</sup> <sub>7 9 7</sub> | <sup>2</sup> <sub>5</sub>   |
| <sup>1</sup> <sub>5 7</sub> | <sup>1</sup> <sub>5 7</sub>   | <sup>3</sup> <sub>1 5</sub>     | <sup>1</sup> <sub>5</sub>         | 2                             | 9                           | 4                             | 6                             | 8                           |
| <sup>2</sup> <sub>5</sub>   | 9                             | 8                               | <sup>5</sup> <sub>6 4 5 6 7</sub> | <sup>4</sup> <sub>7</sub>     | 3                           | <sup>2</sup> <sub>7</sub>     | 1                             |                             |
| 8                           | <sup>4</sup> <sub>5 7</sub>   | <sup>4</sup> <sub>5 9</sub>     | <sup>4</sup> <sub>9</sub>         | 1                             | 2                           | <sup>5</sup> <sub>7 9</sub>   | <sup>4</sup> <sub>7 9</sub>   | 6                           |
| <sup>1</sup> <sub>5 9</sub> | <sup>1</sup> <sub>4 5</sub>   | <sup>1</sup> <sub>2 4 5</sub>   | <sup>4</sup> <sub>8 9</sub>       | 7                             | 6                           | <sup>1</sup> <sub>5 8 9</sub> | 3                             | <sup>2</sup> <sub>4 5</sub> |
| <sup>1</sup> <sub>7 9</sub> | <sup>1</sup> <sub>4 6 7</sub> | <sup>1</sup> <sub>2 4 6 9</sub> | <sup>4</sup> <sub>8 9</sub>       | 3                             | 5                           | <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>2 4 7</sub> | <sup>2</sup> <sub>9</sub>   |

|                                   |                                 |                               |                                 |                                 |                                 |                             |                               |                               |
|-----------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-------------------------------|
| 1                                 | <sup>2</sup> <sub>4 7 9</sub>   | <sup>3</sup> <sub>4 7</sub>   | 5                               | <sup>2</sup> <sub>4</sub>       | <sup>3</sup> <sub>9</sub>       | 6                           | 8                             | <sup>2</sup> <sub>4 9</sub>   |
| <sup>6</sup> <sub>8</sub>         | <sup>6</sup> <sub>4</sub>       | <sup>2</sup> <sub>3 4</sub>   | <sup>1</sup> <sub>2 3 9</sub>   | <sup>2</sup> <sub>3 4</sub>     | <sup>1</sup> <sub>3 9</sub>     | 7                           | <sup>2</sup> <sub>3 5 9</sub> | <sup>2</sup> <sub>4 5 9</sub> |
| <sup>2</sup> <sub>3 4 9</sub>     | <sup>2</sup> <sub>3 4 9</sub>   | 5                             | 7                               | 8                               | 6                               | <sup>4</sup> <sub>9</sub>   | <sup>2</sup> <sub>3 9</sub>   | 1                             |
| <sup>2</sup> <sub>3 4 5 7 8</sub> | <sup>1</sup> <sub>2 3 4 7</sub> | <sup>2</sup> <sub>3 4 7</sub> | <sup>1</sup> <sub>2 3 8 9</sub> | <sup>2</sup> <sub>3 7 8 9</sub> | <sup>1</sup> <sub>3 7 8 9</sub> | <sup>5</sup> <sub>8 9</sub> | <sup>5</sup> <sub>9</sub>     | 6                             |
| <sup>5</sup> <sub>7 8</sub>       | <sup>3</sup> <sub>1 7 8</sub>   | 9                             | <sup>1</sup> <sub>8</sub>       | 6                               | <sup>1</sup> <sub>7 8</sub>     | 2                           | 4                             | <sup>5</sup> <sub>8</sub>     |
| <sup>2</sup> <sub>3 8</sub>       | <sup>2</sup> <sub>3 8</sub>     | 6                             | <sup>2</sup> <sub>3 8 9</sub>   | 5                               | 4                               | <sup>3</sup> <sub>8 9</sub> | 1                             | 7                             |
| <sup>4</sup> <sub>9</sub>         | <sup>5</sup> <sub>4 9</sub>     | <sup>4</sup> <sub>9</sub>     | 6                               | 1                               | 2                               | <sup>4</sup> <sub>8 9</sub> | 7                             | <sup>4</sup> <sub>8 9</sub>   |
| <sup>2</sup> <sub>4 9</sub>       | <sup>2</sup> <sub>6 4 9</sub>   | 1                             | <sup>3</sup> <sub>8</sub>       | 7                               | <sup>3</sup> <sub>8</sub>       | <sup>4</sup> <sub>5 9</sub> | <sup>2</sup> <sub>5 6 9</sub> | <sup>2</sup> <sub>4 5 9</sub> |
| <sup>2</sup> <sub>7 9</sub>       | <sup>2</sup> <sub>6 7</sub>     | 8                             | 4                               | 9                               | 5                               | 1                           | <sup>2</sup> <sub>6</sub>     | 3                             |

|                               |                               |                               |                               |                                 |                                   |                               |                                 |                           |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------------|-------------------------------|---------------------------------|---------------------------|
| <sup>5</sup> <sub>7</sub>     | <sup>6</sup> <sub>9</sub>     | 2                             | 1                             | <sup>5</sup> <sub>7 8</sub>     | <sup>3</sup> <sub>5 7</sub>       | <sup>4</sup> <sub>7</sub>     | <sup>6</sup> <sub>4 7 8</sub>   | 6                         |
| 1                             | 8                             | 4                             | 6                             | <sup>2</sup> <sub>7</sub>       | <sup>2</sup> <sub>7</sub>         | <sup>1</sup> <sub>2 7 9</sub> | <sup>1</sup> <sub>2 3 9</sub>   | 5                         |
| <sup>1</sup> <sub>5 6 7</sub> | <sup>5</sup> <sub>6 7</sub>   | 3                             | <sup>2</sup> <sub>7 8</sub>   | <sup>5</sup> <sub>9</sub>       | 4                                 | <sup>1</sup> <sub>2 6 7</sub> | <sup>1</sup> <sub>2 6 7 8</sub> | <sup>2</sup> <sub>6</sub> |
| <sup>3</sup> <sub>7</sub>     | <sup>5</sup> <sub>6 8 9</sub> | 2                             | <sup>5</sup> <sub>7 8</sub>   | <sup>5</sup> <sub>6 7 8</sub>   | <sup>1</sup> <sub>5 6 7 8</sub>   | <sup>1</sup> <sub>6 9</sub>   | <sup>5</sup> <sub>9</sub>       | 4                         |
| <sup>4</sup> <sub>5 6 7</sub> | <sup>5</sup> <sub>6 8 9</sub> | <sup>4</sup> <sub>5 7 8</sub> | <sup>2</sup> <sub>7 8</sub>   | <sup>2</sup> <sub>5 6 7 8</sub> | <sup>1</sup> <sub>2 5 6 7 8</sub> | <sup>1</sup> <sub>2 6 9</sub> | <sup>1</sup> <sub>2 5 9</sub>   | 3                         |
| <sup>4</sup> <sub>3</sub>     | 1                             | <sup>5</sup> <sub>6 4</sub>   | <sup>3</sup> <sub>2 5 6</sub> | 9                               | 8                                 | 7                             | <sup>2</sup> <sub>6</sub>       |                           |
| 8                             | <sup>5</sup> <sub>6 7</sub>   | <sup>5</sup> <sub>6</sub>     | 9                             | <sup>2</sup> <sub>5 6</sub>     | 3                                 | <sup>4</sup> <sub>7</sub>     | <sup>4</sup> <sub>7</sub>       | 1                         |
| 9                             | 4                             | <sup>5</sup> <sub>6 7</sub>   | <sup>2</sup> <sub>5</sub>     | 1                               | <sup>2</sup> <sub>5 6</sub>       | 3                             | 8                               | <sup>2</sup> <sub>7</sub> |
| 2                             | 3                             | 1                             | <sup>7</sup> <sub>8</sub>     | 4                               | <sup>7</sup> <sub>8</sub>         | 5                             | 6                               | 9                         |

|                               |                                 |                                 |                             |                                 |                             |                                 |                                 |                                 |
|-------------------------------|---------------------------------|---------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|
| <sup>4</sup> <sub>7 9</sub>   | <sup>4</sup> <sub>5 6 7 9</sub> | <sup>4</sup> <sub>5 6 7 9</sub> | 2                           | 3                               | <sup>4</sup> <sub>7 9</sub> | <sup>1</sup> <sub>5 8 9</sub>   | <sup>4</sup> <sub>5 6 8 9</sub> | <sup>1</sup> <sub>4 5 6 9</sub> |
| 1                             | <sup>4</sup> <sub>9</sub>       | 8                               | 6                           | 5                               | <sup>4</sup> <sub>9</sub>   | 7                               | 2                               | 3                               |
| 2                             | <sup>4</sup> <sub>5 6 7</sub>   | 3                               | 8                           | 1                               | <sup>4</sup> <sub>7 9</sub> | <sup>5</sup> <sub>9</sub>       | <sup>4</sup> <sub>5 6 9</sub>   | <sup>4</sup> <sub>5 6 9</sub>   |
| <sup>4</sup> <sub>7 9</sub>   | <sup>3</sup> <sub>4 7 9</sub>   | <sup>4</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>7 9</sub> | 2                               | 5                           | 6                               | 1                               | 8                               |
| <sup>3</sup> <sub>7 9</sub>   | <sup>6</sup> <sub>8</sub>       | 2                               | 1                           | <sup>3</sup> <sub>6 7 9</sub>   | <sup>5</sup> <sub>9 7</sub> | <sup>3</sup> <sub>4 5 9 7</sub> | <sup>4</sup> <sub>5 9 7</sub>   | <sup>4</sup> <sub>5 9</sub>     |
| <sup>3</sup> <sub>7 9</sub>   | <sup>1</sup> <sub>5 6</sub>     | <sup>1</sup> <sub>5</sub>       | 4                           | <sup>3</sup> <sub>7 8 9 8</sub> | <sup>3</sup> <sub>6</sub>   | 2                               | <sup>7</sup> <sub>9 7</sub>     | <sup>9</sup> <sub>7 9</sub>     |
| 5                             | 2                               | <sup>6</sup> <sub>7 9</sub>     | <sup>3</sup> <sub>7 9</sub> | <sup>3</sup> <sub>7 8 9</sub>   | 1                           | 4                               | <sup>3</sup> <sub>7 8 9</sub>   | <sup>6</sup> <sub>7 9</sub>     |
| <sup>4</sup> <sub>7 8 9</sub> | 3                               | <sup>1</sup> <sub>4 7 9</sub>   | <sup>5</sup> <sub>7 9</sub> | 6                               | 2                           | <sup>1</sup> <sub>5 8 9</sub>   | <sup>5</sup> <sub>7 8 9</sub>   | <sup>1</sup> <sub>5 7 9</sub>   |
| <sup>7</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>6 7</sub>     | <sup>6</sup> <sub>7 9</sub> | <sup>5</sup> <sub>9</sub>       | 4                           | <sup>3</sup> <sub>5 8 9</sub>   | <sup>3</sup> <sub>5 6 8 9</sub> | 2                               |

|     |       |       |       |       |     |     |       |     |       |     |     |     |     |   |
|-----|-------|-------|-------|-------|-----|-----|-------|-----|-------|-----|-----|-----|-----|---|
|     | 3     |       | 3     | 5     | 4 5 | 2   | 4 5 6 | 3   | 1     | 3   | 8   | 1   | 4   | 6 |
| 7   |       | 7     | 9     | 7     | 9   |     |       |     |       |     |     |     |     |   |
|     | 3     |       | 1     | 2     | 4 5 |     | 4 5 6 | 3   | 2 3   |     | 7   | 2   | 4   | 6 |
| 8   |       |       |       | 5     | 9   |     |       |     |       |     |     |     |     |   |
| 4   |       | 2 3   |       | 6     | 1   | 8   | 7     |     | 2 3   |     | 9   | 5   |     |   |
|     |       |       |       |       |     |     |       |     |       |     |     |     |     |   |
| 2   |       | 3     | 1     |       | 7   | 1   | 5 6   | 5 6 | 4     | 5 6 |     |     | 6   |   |
|     | 8     |       | 8     |       |     |     | 9     | 9   |       |     |     |     | 8 9 |   |
| 9   | 5     | 4     |       |       | 8   | 3   | 2     | 1 2 | 1 2   |     | 6   | 7   |     |   |
|     |       |       |       |       |     |     | 6     |     | 6     |     |     |     |     |   |
| 1   | 3     |       | 3     | 1     | 2   | 1   | 4 5 6 | 2   | 5     | 2 3 | 2   | 6   |     |   |
| 7 8 | 7 8   | 7 8   |       |       | 9   |     | 9     | 9   | 8 9   | 5 6 | 8 9 |     |     |   |
|     |       | 2     | 2     |       | 3   | 4 5 | 1     | 5   | 4 5 6 | 2   | 2   | 6   |     |   |
| 7 8 | 7 8 9 | 7 8 9 |       |       |     | 7   | 9     | 8 9 | 8 9   |     | 8 9 |     |     |   |
| 5   |       | 2     | 1 2   |       | 4   | 4   |       | 4   | 1 2   | 4   | 6   | 3   |     |   |
|     | 4     | 6     | 7 8 9 | 7 8 9 |     | 9   | 7     | 9   | 8 9   |     |     |     |     |   |
| 1   |       | 2     |       |       | 3   | 6   | 4 5   | 2   | 7     | 1 2 | 1 2 |     |     |   |
| 8   |       | 4     | 8 9   |       |     |     | 9     | 8 9 | 4 5   |     |     | 8 9 |     |   |

|     |       |     |       |   |   |     |       |     |     |     |     |   |   |   |
|-----|-------|-----|-------|---|---|-----|-------|-----|-----|-----|-----|---|---|---|
| 1 2 | 1 2 3 |     | 5     | 3 | 1 | 3   | 2 3   | 4   | 6   | 2 3 | 2 3 |   |   |   |
| 7 8 | 7 8   |     | 8     |   | 7 | 9   | 7 8   |     |     | 5   | 9   |   |   |   |
| 2   | 2 3   |     | 4     | 3 |   |     | 2 3   | 2 3 | 7   | 2 3 | 1   |   |   |   |
| 4   | 4     | 8   | 6     | 4 | 6 |     | 8     | 8 9 |     | 4   | 9   |   |   |   |
| 9   | 1 2 3 |     | 3     | 1 | 3 | 2 3 | 1 2 3 | 2 3 | 8   | 2 3 |     |   |   |   |
|     | 4     | 6   | 4 5 6 | 7 | 6 | 7   |       |     |     | 5   |     |   |   |   |
| 3   | 1 2   |     | 4     | 6 | 4 | 6   | 1     |     | 5   | 1 2 | 2   |   |   |   |
|     | 4     | 8 9 | 8 9   | 7 | 7 | 8   | 7 8   | 7 8 |     | 4   | 7   | 9 | 6 | 9 |
| 1   |       |     | 7     | 2 | 5 | 6   | 4     | 3   | 1   | 3   | 8   |   |   |   |
| 4   | 4     |     | 9     |   |   |     | 9     |     | 4   | 4   | 9   |   |   |   |
| 1 2 |       | 5   | 4     | 6 | 1 | 3   | 1     | 3   | 2   | 1 2 | 2   |   |   |   |
| 4   | 8     |     |       | 8 | 7 |     | 7 8   |     | 4   | 4   | 7   |   | 6 |   |
| 6   |       | 3   |       | 3 | 8 | 1   | 5     | 2 3 | 2 3 |     | 7   |   |   |   |
|     | 4     | 9   |       | 9 |   |     |       | 9   |     |     |     |   |   |   |
|     |       | 3   | 2     | 4 | 6 | 4   | 6     | 3   | 1   | 5   | 3   | 5 | 3 |   |
| 7 8 | 7 8 9 |     |       |   |   |     | 7     | 9   |     | 9   |     |   |   |   |
| 5   |       | 3   | 1     |   | 3 | 2 3 | 2 3   |     | 8   | 6   | 4   |   |   |   |
|     | 7     | 9   |       | 7 | 9 |     |       | 7   | 9   |     |     |   |   |   |

|       |     |       |     |       |     |     |   |     |     |     |     |   |   |  |
|-------|-----|-------|-----|-------|-----|-----|---|-----|-----|-----|-----|---|---|--|
| 2     | 2   | 2 3   | 1   | 3     | 7   | 4 5 | 3 | 1   | 3   | 3   | 1   | 6 |   |  |
| 4 5 6 | 4 5 | 4 5 6 | 4   | 6     |     | 8 9 |   | 4   | 5   | 4   | 6   | 8 |   |  |
| 9     |     |       | 3   | 1     | 3   | 1   | 3 | 3   | 1   | 3   | 2   | 1 | 6 |  |
|       | 4 5 | 4 5 6 | 4   | 6     | 5   | 4 5 | 8 | 4   | 5   |     |     | 8 |   |  |
| 4 5 6 |     | 3     |     | 3     |     |     | 3 |     |     | 3   |     |   |   |  |
| 8     |     | 8     | 4   | 6     | 5   | 2   | 9 | 4   | 6   | 7   |     |   |   |  |
|       | 2   | 2     |     | 3     | 2 3 | 1   | 6 | 8   | 2 3 |     |     |   |   |  |
| 4 5   | 4 5 | 4 5   | 9   | 9     | 7   | 9   |   |     | 5   | 9   |     |   |   |  |
| 3     | 6   | 2     |     |       | 4   |     | 2 | 1   | 2   |     |     |   |   |  |
|       |     | 5     | 8 9 | 7 8 9 |     | 8 9 | 7 |     | 5   | 9   |     |   |   |  |
| 2     | 2   |       | 1   | 5     | 2 3 | 6   | 4 | 2 3 | 3   | 2 3 |     |   |   |  |
| 7 8   |     | 9     |     |       | 8 9 |     | 7 | 4   | 7   | 9   |     |   |   |  |
| 4 5 6 | 8   | 4 5 6 | 2   | 1     | 3   | 3   | 1 | 3   | 3   | 1   | 6   |   |   |  |
|       |     |       |     | 5     | 9   | 9   | 7 | 7   | 9   |     |     |   |   |  |
| 2     | 5 6 | 3     | 2   | 1     | 1   | 5   | 7 | 1 2 |     | 6   | 4   |   |   |  |
|       |     |       | 9   | 8 9   | 8 9 |     |   |     |     | 9   |     |   |   |  |
| 1     |     | 2     | 2   | 4     | 3   | 6   | 4 | 3   | 8   | 5   | 2 3 |   |   |  |
|       | 4   | 7     | 9   | 7     | 9   |     | 9 |     |     |     | 9   |   |   |  |

|     |     |   |     |       |       |       |     |       |     |     |     |   |   |  |
|-----|-----|---|-----|-------|-------|-------|-----|-------|-----|-----|-----|---|---|--|
| 4 5 | 2   | 4 | 3   | 4 5   | 1     | 4 5 6 | 3   | 4     | 3   | 3   | 7   |   |   |  |
|     | 9   |   | 8 9 | 4     | 8     |       |     | 4     | 5 6 | 4   |     |   |   |  |
| 7   | 1   |   | 3   | 4     | 9     | 4 5 6 | 3   | 2 3   | 2 3 | 2   | 5 6 |   |   |  |
|     |     |   | 8   |       |       | 8     |     | 4     | 5 6 | 4   |     |   |   |  |
| 6   | 4 5 |   | 3   |       | 2     | 4 5   | 7   | 1     | 3   | 1   | 3   | 8 |   |  |
|     |     | 9 | 9   |       |       |       |     | 9     | 4   | 9   |     |   |   |  |
|     | 2   |   | 1   | 6     | 3     | 4 5 6 | 1   | 1 2 3 | 5   | 1 2 |     |   |   |  |
| 4   | 8 9 | 7 |     |       | 4     | 8     | 8 9 | 4     | 8 9 |     | 9   |   |   |  |
| 2   | 4   |   | 6   | 3     | 4 5 6 | 4 5   | 8 9 | 1     | 4   | 8 9 | 7   |   |   |  |
|     |     | 3 | 5   | 4     |       | 1     |     | 1     | 3   | 1   | 3   | 1 |   |  |
| 4   | 8 9 | 7 |     | 7 8 9 | 2     | 4     | 8 9 | 4     | 6   | 4   |     | 6 |   |  |
|     | 3   | 6 | 7   | 1     | 5     | 3     | 5   | 2     | 2   |     |     | 4 |   |  |
|     | 9   |   |     |       | 9     |       |     | 8     | 8   |     |     |   |   |  |
| 1   | 4 5 | 4 | 4 5 | 4 5   | 2     | 7     | 6   | 3     |     |     |     |   |   |  |
|     |     | 9 | 8 9 | 8     |       |       |     |       |     |     |     |   |   |  |
| 4   | 3   | 8 | 2   | 6     | 7     | 4     | 3   | 1     | 5   | 1   | 1   | 5 | 9 |  |
|     |     |   |     |       |       |       |     | 9     |     |     |     |   |   |  |

|     |     |       |       |       |     |     |       |     |     |     |       |   |  |  |
|-----|-----|-------|-------|-------|-----|-----|-------|-----|-----|-----|-------|---|--|--|
| 1   | 3   | 4     | 5     | 5     | 2   | 1   | 1     |     | 5   | 8 9 |       | 6 |  |  |
| 7 8 |     |       | 7 8   | 7 8 9 |     |     |       |     | 8 9 |     |       |   |  |  |
| 9   | 2   | 2     |       | 3     | 1   | 4 5 | 4     | 2   | 2 3 |     |       |   |  |  |
|     | 5 6 |       | 4 5   | 4 5 6 |     | 7 8 |       | 8   | 4 5 |     |       |   |  |  |
| 1   | 1 2 | 1 2   |       | 3     |     | 4 5 | 4 5 6 | 5 6 | 7   | 1 2 | 1 2 3 |   |  |  |
|     | 6   | 5 6   |       | 8     |     |     | 8 9   |     | 8 9 |     | 9     |   |  |  |
| 1   | 6   | 4     | 3     | 9     | 5 6 | 8   | 2     | 1   | 6   | 1   | 5     |   |  |  |
|     |     |       |       |       | 7   |     |       | 7   |     | 7   |       |   |  |  |
| 5   | 1 2 | 1 2   | 1 2   | 4     | 2   |     | 1     | 3   | 1   | 4   | 9     |   |  |  |
|     | 6   | 7 8 9 | 7 8 9 |       |     | 7   | 6     | 4   | 9   |     |       |   |  |  |
| 1   | 1 2 | 1 2   | 1 2   | 4     | 3   | 5 6 | 1     | 4   | 6   | 8   |       |   |  |  |
|     | 6   | 7     | 9     |       |     | 7   | 4 5   | 9   | 7   | 9   |       |   |  |  |
| 2   | 9   | 5     | 6     | 1     | 4   |     | 3     |     |     |     | 3     |   |  |  |
|     |     |       |       |       |     |     | 8     | 7 8 | 7   |     |       |   |  |  |
| 4   | 1   | 1     | 2     | 2     | 3   | 6   | 1 2   | 1 2 |     |     |       |   |  |  |
|     | 7 8 | 7 8   | 7 8   | 7 8 9 |     |     |       | 9   |     | 9   |       |   |  |  |
| 3   | 1   | 6     | 2     | 2     |     | 1   | 4     | 5   | 1 2 |     |       |   |  |  |
|     | 7 8 |       | 7 8   | 7 8 9 | 7   | 9   |       | 9   |     |     |       |   |  |  |

|     |     |     |     |     |   |     |     |     |     |     |   |   |  |  |
|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|---|---|--|--|
| 2 3 | 1   | 2   | 8   | 2   | 5 | 7   | 2 3 | 4   |     |     |   |   |  |  |
|     | 6   |     |     | 6   |   |     | 6   |     |     |     |   |   |  |  |
| 4   |     | 5 6 | 7   | 1 2 | 3 |     | 6   | 9   | 1 2 | 6   |   |   |  |  |
|     |     |     |     | 6   |   | 8   |     |     | 8   |     |   |   |  |  |
| 7   |     | 3   | 8   | 1 2 | 1 |     | 3   | 1 2 |     |     | 5 |   |  |  |
|     |     | 6   |     | 9   | 4 |     |     | 6   |     |     |   |   |  |  |
| 8   | 5 6 | 4   |     | 3   | 7 | 2   | 1   | 5 6 | 9   |     |   |   |  |  |
|     |     |     |     | 6   |   |     |     |     |     |     |   |   |  |  |
| 3   | 2   | 5 6 | 1   | 4   | 9 |     | 3   | 5 6 | 5 6 | 7 8 | 6 |   |  |  |
|     |     | 7   |     |     |   |     | 8   |     | 8   |     |   |   |  |  |
| 1   | 3   | 9   | 1   |     | 3 | 5   | 8   | 4   | 3   | 2   | 2 |   |  |  |
|     | 6   |     | 7   |     | 6 |     |     | 6   | 4   | 6   | 7 | 6 |  |  |
| 5   | 6   | 8   | 5 6 | 4   | 1 | 1   | 2   | 7   | 3   |     |   |   |  |  |
|     |     |     |     | 9   | 9 |     |     |     |     |     |   |   |  |  |
| 1   |     | 4   | 3   | 2   | 8 | 7   |     | 1   | 5 6 | 1   | 6 |   |  |  |
|     | 9   |     |     |     |   |     |     | 9   |     |     |   |   |  |  |
| 1 2 | 7   | 1 2 | 5   | 3   | 6 | 4   | 1   | 1   |     |     |   |   |  |  |
|     | 9   |     |     |     |   | 8 9 | 4   | 8   | 8   |     |   |   |  |  |

|                 |            |            |          |            |            |            |        |          |
|-----------------|------------|------------|----------|------------|------------|------------|--------|----------|
| 1<br>4          | 2 3<br>4   | 1 2 3<br>4 | 1 2<br>5 | 1 2<br>7 8 | 2<br>5 7 8 | 9          | 3<br>7 | 6        |
| 5               | 2 3<br>6   | 8          | 2<br>6   | 9          | 2<br>7     | 4<br>7     | 1<br>4 | 3        |
| 1<br>9          | 6<br>9     | 7          | 3<br>1   | 6          | 4          | 2          | 8      | 5        |
| 3               | 2<br>8 9   | 1 2<br>9   | 7        | 1 2        | 6          | 5          | 4      | 1<br>8 9 |
| 1<br>4<br>7     | 5<br>9     | 1 2<br>4   | 8        | 1 2 3<br>4 | 2 3<br>9   | 1 3<br>7   | 3<br>6 | 1<br>9   |
| 1<br>4<br>7 8 9 | 4<br>7 8 9 | 1<br>4     | 6<br>9   | 5          | 3<br>9     | 1 3<br>7 8 | 3<br>6 | 2        |
| 4<br>7 8 9      | 1          | 5          | 4<br>6   | 4<br>7 8   | 6<br>9     | 3<br>7 8 9 | 2<br>4 | 3<br>8   |
| 2               | 4<br>8 9   | 3<br>9     | 4        | 6<br>9     | 4<br>8     | 1          | 4<br>8 | 5<br>7   |
| 6               | 4<br>7 8   | 3<br>4     | 2<br>4 5 | 2 3<br>7 8 | 2 3<br>5   | 1 3<br>4   | 9      | 1<br>4   |

|               |               |             |                 |                 |                   |               |                   |               |                 |                 |
|---------------|---------------|-------------|-----------------|-----------------|-------------------|---------------|-------------------|---------------|-----------------|-----------------|
| 8             | 1 2<br>4<br>7 |             | 3<br>6          | 1 3<br>4<br>9   | 1 3<br>4<br>6     | 1 3<br>4<br>6 | 3<br>9            | 5             | 1 3<br>4<br>6   | 1 2 3<br>7<br>9 |
| 4<br>7        | 3<br>4<br>7   | 1<br>4<br>7 | 5 6<br>7        | 3<br>4 5<br>8 9 | 1 3<br>4 5<br>6 8 | 2             | 1 3<br>4 5<br>6 8 | 1 3<br>4<br>6 | 1 3<br>4<br>6   | 1 2 3<br>7<br>9 |
| 2 3<br>4      | 9             | 3<br>5 6    | 1 3<br>4 5<br>8 | 7               | 1 3<br>4 5<br>6 8 | 3<br>4        | 1 2 3<br>4<br>8   | 1 3<br>4<br>6 | 1 2 3<br>4<br>6 | 1 2 3<br>6      |
| 5             | 6             | 4           | 1 2 3           | 1 2 3           | 1 3               | 9             | 7                 | 8             |                 |                 |
| 9             | 3             | 2           | 7 8             | 4 5 6           | 7 8               | 1<br>4        | 1<br>4 5 6        | 1<br>5 6      |                 |                 |
| 1             | 7 8           | 7 8         | 4 5             | 9               | 4 5 6             | 4<br>3        | 2                 | 3<br>5 6      |                 |                 |
| 6             | 2<br>7        | 1           | 2 3<br>5        | 8               | 3<br>7            | 5<br>7        | 2 3<br>9          | 4             |                 |                 |
| 2 3<br>4<br>7 | 5             | 3<br>7 8    | 1 2 3<br>4<br>7 | 1 2 3<br>9      | 1 3<br>4<br>7     | 3<br>9        | 6                 | 1 3<br>8      | 1 2 3<br>7      |                 |
| 2 3<br>4<br>7 | 2<br>7 8      | 9           | 6               | 1 2 3<br>4      | 1 3<br>4<br>7     | 3<br>9        | 1 2 3<br>7 8      | 1 3<br>5<br>8 | 1 2 3<br>5<br>7 |                 |

|        |            |          |          |            |              |            |        |          |        |
|--------|------------|----------|----------|------------|--------------|------------|--------|----------|--------|
| 3      | 1<br>4 5 6 | 1<br>4   | 6        | 1 2<br>9   | 1 2<br>7     | 1 2<br>7   | 2<br>6 | 8        | 2<br>5 |
| 4 5 6  | 2          | 1<br>4   | 6        | 1<br>3     | 8            | 1<br>3     | 6      | 4 5      | 9      |
| 7 8 9  | 7 8 9      | 8 9      | 4        | 5          | 2 3          | 1          | 2 3    | 6        |        |
| 4<br>8 | 6<br>8     | 2        | 1<br>5   | 3<br>7     | 1<br>3       | 1<br>5     | 3<br>7 | 9        | 4<br>6 |
| 4<br>7 | 6<br>7     | 1<br>4   | 3<br>6   | 2 3<br>5   | 9            | 8          | 4<br>7 | 2 3<br>5 | 6      |
| 7<br>9 | 7<br>9     | 5        | 6        | 4          | 2 3<br>7     | 8          | 1      | 2 3<br>7 | 9      |
| 2<br>4 | 6<br>8 9   | 4<br>8 9 | 7        | 2 3<br>8 9 | 2 3<br>4     | 2 3<br>9   | 5      | 2 3<br>9 | 1      |
| 4<br>5 | 2<br>9     | 3<br>4   | 7        | 1 2 3<br>9 | 1 2 3<br>4 5 | 1 2 3<br>9 | 6      | 2 3<br>9 | 8      |
| 1      | 5<br>8 9   | 3<br>8 9 | 2 3<br>5 | 6          | 2<br>5       | 2 3<br>9   | 7      | 4        |        |

|                     |                         |                 |            |            |                            |                       |        |               |
|---------------------|-------------------------|-----------------|------------|------------|----------------------------|-----------------------|--------|---------------|
| 4 <sup>2</sup><br>8 | 4 <sup>2</sup> 6<br>8   | 7 8<br>6        | 5          | 3          | 7 8<br>2                   | 4 <sup>6</sup><br>7 8 | 9      | 1             |
| 9                   | 1 2 3<br>5              | 1<br>7 8        | 6          | 4          | 1 2<br>7 8                 | 3<br>7 8              | 3      | 3             |
| 1<br>4 5<br>8       | 1 <sup>3</sup><br>4 5 6 | 1<br>5 6<br>7 8 | 1          | 1          | 9                          | 3<br>4 5 6<br>7 8     | 2      | 4 5<br>8      |
| 1 2<br>5<br>8       | 1 2<br>5                | 4               | 3          | 6          | 1<br>8                     | 2<br>5<br>7 8 9       | 7 8    | 2<br>5<br>8 9 |
| 7                   | 1 2<br>5                | 1<br>5<br>8     | 1 2<br>8 9 | 1 2<br>8 9 | 4                          | 2 3<br>5<br>8         | 3      | 6             |
| 6                   | 9                       | 3               | 2<br>7 8   | 2<br>7 8   | 5                          | 1                     | 4      | 2<br>8        |
| 3                   | 8                       | 1<br>6          | 4          | 2<br>9     | 1<br>6                     | 2<br>9                | 5      | 7             |
| 1<br>4              | 1<br>4<br>7             | 6<br>2          | 1<br>7 8 9 | 5          | 1 <sup>3</sup><br>6<br>7 8 | 3<br>4<br>8 9         | 1<br>6 | 3<br>4<br>8 9 |
| 1<br>4 5            | 1<br>4 5 6<br>7         | 9               | 1 2<br>7 8 | 1 2<br>7 8 | 1 <sup>3</sup><br>6<br>7 8 | 3<br>2 3<br>4         | 1<br>6 | 2 3<br>4<br>8 |

|                           |                                |                                |                                |                                       |                                    |                                |                                  |                                       |                                       |
|---------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------------|------------------------------------|--------------------------------|----------------------------------|---------------------------------------|---------------------------------------|
| 7                         | <sup>1</sup> <sub>5</sub><br>8 | <sup>3</sup> <sub>5</sub><br>8 | <sup>1</sup> <sub>5</sub><br>8 | <sup>3</sup> <sub>6</sub><br>9        | <sup>1</sup> <sub>6</sub><br>9     | 2                              | <sup>3</sup> <sub>5 6</sub><br>8 | 4                                     | <sup>3</sup> <sub>8</sub>             |
| 2                         | 6                              | <sup>1</sup> <sub>4</sub><br>8 | <sup>3</sup>                   | 5                                     | <sup>1</sup> <sub>4</sub><br>7     | <sup>4<br/>7</sup>             | 9                                | <sup>3</sup><br>8                     | <sup>3</sup><br>7 8                   |
| 9                         | <sup>4</sup> <sub>5</sub>      | <sup>3</sup><br>4 5            | <sup>3</sup>                   | <sup>3</sup><br>6                     | <sup>4<br/>7</sup>                 | 6                              | 8                                | <sup>1</sup><br>2 5 6                 | <sup>2</sup> <sub>3</sub><br>6        |
| 3                         | <sup>2</sup><br>4 5            | 7                              | <sup>2</sup><br>6<br>9         | <sup>2</sup><br>5 6<br>8 9            | <sup>5</sup> <sub>6 9</sub>        | 4                              | <sup>2</sup><br>4 8              | <sup>1</sup> <sub>2</sub><br>6<br>9   | <sup>1</sup> <sub>2</sub><br>6<br>8 9 |
| 6                         | <sup>2</sup><br>4 5            | <sup>4</sup> <sub>5</sub><br>9 | 7                              | <sup>2</sup> <sub>3</sub><br>5<br>8 9 | 1                                  | <sup>4</sup><br>8              | <sup>2</sup> <sub>3</sub><br>9   | <sup>2</sup><br>8                     | <sup>2</sup> <sub>3</sub><br>8 9      |
| 8                         | <sup>1</sup> <sub>2</sub>      | <sup>1</sup><br>9              | 4                              | <sup>2</sup> <sub>3</sub><br>6<br>9   | <sup>6<br/>9</sup>                 | <sup>2</sup> <sub>3</sub><br>6 | 7                                | 5                                     |                                       |
| <sup>4</sup> <sub>5</sub> | <sup>3</sup><br>8              | <sup>3</sup><br>8              | <sup>6</sup><br>9              | <sup>4</sup> <sub>5 6</sub><br>7 9    | <sup>4</sup> <sub>5 6</sub><br>7 9 | <sup>5</sup> <sub>6 9</sub>    | <sup>2</sup><br>5 6              | <sup>1</sup> <sub>2</sub><br>5 6<br>9 | <sup>1</sup> <sub>2</sub><br>6<br>9   |
| <sup>4</sup> <sub>5</sub> | 9                              | 6                              | <sup>1</sup> <sub>2</sub>      | <sup>1</sup> <sub>2</sub>             | <sup>4</sup> <sub>5</sub>          | 7                              | <sup>3</sup><br>8                | <sup>3</sup><br>8                     |                                       |
| 1                         | 7                              | 2                              | 8                              | <sup>5</sup> <sub>6</sub><br>9        | 3                                  | <sup>5</sup> <sub>6</sub>      | <sup>5</sup> <sub>6</sub><br>9   | 4                                     |                                       |

|              |          |            |          |            |          |          |              |          |            |
|--------------|----------|------------|----------|------------|----------|----------|--------------|----------|------------|
| 3            | 2        | 1<br>7     | 6        | 5          | 1<br>4   | 4<br>8 9 | 4<br>7 8 9   | 4<br>9   | 4<br>7 8 9 |
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| 4            | 6        | 8          | 4        | 6          | 2 3<br>9 | 7        | 2 3<br>9     | 1        | 5          |
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| 4 5 6<br>8 9 | 7        | 4<br>8     | 2<br>8 9 | 1          | 2<br>8 9 | 3        | 4 5 6<br>8 9 |          |            |
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| 2            | 1        | 5          | 3<br>9   | 8          | 6        | 4<br>9   | 7            | 4<br>9   |            |
| 7 8          | 4        | 3<br>9     | 7 8      | 5          | 2 3<br>4 | 2 3<br>9 | 6            | 1<br>9   | 1<br>3     |
| 4            | 6        | 4<br>9     | 3<br>6   | 4          | 6        | 1        | 4            | 9        | 7          |

|                          |                          |                                |                              |                            |                              |                          |                            |                      |
|--------------------------|--------------------------|--------------------------------|------------------------------|----------------------------|------------------------------|--------------------------|----------------------------|----------------------|
| 3                        | 2                        | <div>4 6<br/>7</div>           | <div>4 5 6<br/>8</div>       | <div>4 7<br/>1 2 3</div>   | <div>4 5 6<br/>8</div>       | <div>4 5 6<br/>8</div>   | 9                          | 1                    |
| 8                        | 9                        | <div>1<br/>4</div>             | <div>1 2 3<br/>4 5 6</div>   | <div>1 2 3<br/>4</div>     | <div>1 2<br/>4 5 6</div>     | 7                        | <div>4 5 6<br/>4 5</div>   | <div>2<br/>4 5</div> |
| 5                        | <div>1<br/>4<br/>7</div> | <div>1<br/>4<br/>6<br/>7</div> | <div>1 2<br/>4 6<br/>9</div> | <div>1 2<br/>4<br/>7</div> | <div>1 2<br/>4 6<br/>9</div> | 3                        | 8                          | <div>2<br/>4</div>   |
| <div>1<br/>7<br/>9</div> | 6                        | <div>1 3<br/>4<br/>9</div>     | <div>1 2 3<br/>4</div>       | 5                          | <div>1 2<br/>4</div>         | 8                        | <div>1<br/>4</div>         | <div>4<br/>7</div>   |
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| 2                        | <div>1<br/>4 5</div>     | 8                              | <div>1<br/>4</div>           | 9                          | 7                            | <div>1<br/>4 5 6</div>   | <div>1<br/>4 5 6</div>     | 3                    |
| 6                        | <div>1<br/>7</div>       | <div>1 5<br/>7</div>           | <div>1<br/>4 5</div>         | 8                          | 3                            | 2                        | <div>1<br/>4 5<br/>7</div> | 9                    |
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| <div>1<br/>9</div>       | 8                        | <div>1 2 3<br/>5<br/>9</div>   | 7                            | <div>1 2<br/>4</div>       | <div>1 2<br/>4 5<br/>9</div> | <div>1 4 5<br/>4 5</div> | <div>1 3<br/>4 5</div>     | 6                    |

|                          |                          |                        |                        |                        |                        |                        |                            |                            |
|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|----------------------------|----------------------------|
| 1                        | <div>4 6<br/>8 9</div>   | 2                      | 5                      | <div>4 6<br/>7 9</div> | <div>8 9</div>         | 3                      | <div>4 8 9<br/>4 8 9</div> | <div>4 6<br/>7 8 9</div>   |
| <div>4 5<br/>8 9</div>   | 7                        | <div>4 6<br/>8</div>   | <div>4 6<br/>9</div>   | 2                      | <div>1 3<br/>8 9</div> | <div>4 5<br/>9</div>   | <div>1 4 5<br/>8 9</div>   | <div>1 4 6<br/>8 9</div>   |
| <div>4 5<br/>8 9</div>   | <div>4 5 6<br/>8 9</div> | <div>4 6<br/>8</div>   | <div>4 6<br/>7 9</div> | <div>4 6<br/>7</div>   | <div>3 1<br/>6 9</div> | <div>4 5<br/>7 9</div> | 2                          | <div>1 4 6<br/>7 8 9</div> |
| <div>4 2<br/>9</div>     | <div>4 6<br/>9</div>     | <div>4 6</div>         | 3                      | 8                      | 5                      | 1                      | 7                          | <div>2<br/>4 9</div>       |
| <div>2 3<br/>4 8 9</div> | <div>1 4<br/>8 9</div>   | <div>1 3<br/>4 8</div> | <div>4 6<br/>9</div>   | <div>4 6<br/>9</div>   | 7                      | <div>4 2<br/>9</div>   | <div>4 8 9</div>           | 5                          |
| 7                        | <div>4 8 9</div>         | 5                      | 1                      | <div>4<br/>9</div>     | 2                      | 6                      | <div>4 3<br/>8 9</div>     | <div>4 3<br/>8 9</div>     |
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| <div>4 5<br/>8</div>     | 2                        | <div>4 7 8</div>       | <div>7 9</div>         | 1                      | <div>3<br/>9</div>     | <div>4 5<br/>7 9</div> | 6                          | <div>4 3<br/>7 9</div>     |
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|                                |                            |                        |                          |                        |                        |                          |                          |                          |
|--------------------------------|----------------------------|------------------------|--------------------------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|
| <div>1 2</div>                 | 8                          | <div>1 3</div>         | 6                        | <div>1 3<br/>4</div>   | <div>2 3<br/>4 5</div> | 7                        | <div>1 5</div>           | 9                        |
| <div>1 6<br/>7 9</div>         | <div>1 5 6<br/>7</div>     | 4                      | <div>5 8<br/>7 8 9</div> | <div>1 8<br/>8 9</div> | <div>8 9</div>         | <div>8 6</div>           | 2                        | 3                        |
| <div>1 2<br/>7 9</div>         | <div>1 2 3<br/>6 5 6</div> | <div>1 3<br/>6</div>   | <div>2 3<br/>7 8 9</div> | <div>1 3<br/>8</div>   | <div>2 3<br/>8 9</div> | 4                        | <div>1 6<br/>8</div>     | <div>5 6<br/>8</div>     |
| 3                              | <div>6<br/>7</div>         | 9                      | <div>2 8<br/>8</div>     | 5                      | <div>2 6<br/>8</div>   | 1                        | 4                        | <div>2 6<br/>7 8</div>   |
| <div>1 6<br/>8</div>           | <div>1 6</div>             | 2                      | <div>4 9</div>           | 7                      | <div>4 9</div>         | 5                        | 3                        | <div>8 6</div>           |
| 5                              | 4                          | <div>7 8 6</div>       | <div>2 3<br/>8</div>     | <div>3 6<br/>8</div>   | 1                      | <div>2 6<br/>8 9</div>   | <div>7 8 9</div>         | <div>7 8 6</div>         |
| <div>1 2<br/>4 6<br/>7 8</div> | 9                          | <div>1 3<br/>7 8</div> | <div>4 5 6<br/>8</div>   | <div>4 6<br/>8</div>   | <div>4 6<br/>8</div>   | <div>2 3<br/>8 7 8</div> | <div>6 5 6<br/>7 8</div> | <div>2 5 6<br/>7 8</div> |
| <div>6 7<br/>7 8</div>         | <div>3 6<br/>7 8</div>     | 1                      | 2                        | <div>5 6<br/>8</div>   | <div>3 6<br/>8 9</div> | <div>5 6<br/>7 8 9</div> | 4                        | <div>4 6<br/>7 8</div>   |
| <div>4 2<br/>8 6</div>         | <div>2 3<br/>6</div>       | 5                      | <div>4 3<br/>8</div>     | 9                      | 7                      | <div>2 3<br/>8 6</div>   | <div>6 8</div>           | 1                        |

|                          |                              |                          |                            |                              |                          |                      |                          |                          |
|--------------------------|------------------------------|--------------------------|----------------------------|------------------------------|--------------------------|----------------------|--------------------------|--------------------------|
| <div>1 5<br/>7</div>     | <div>1 3<br/>4 5<br/>7</div> | 8                        | 2                          | <div>1 3<br/>4 6<br/>7</div> | <div>1 3<br/>4 6</div>   | <div>3 5 6</div>     | 9                        | <div>3 6</div>           |
| 6                        | <div>1 2 3<br/>4 5</div>     | <div>1 2 3<br/>4 5</div> | <div>1 4<br/>8</div>       | 9                            | <div>1 3<br/>4 8</div>   | <div>3 5 8</div>     | 7                        | <div>2 3<br/>8</div>     |
| <div>7 9</div>           | <div>2 3<br/>7</div>         | <div>2 3</div>           | <div>3 6<br/>7 8</div>     | 5                            | <div>4 1<br/>8</div>     | <div>2 3<br/>6</div> | 4                        | <div>2 3<br/>8</div>     |
| <div>5 7<br/>7 8 9</div> | 6                            | <div>4 5<br/>7 9</div>   | <div>4 2 3<br/>7 8 9</div> | <div>4 2 3<br/>7 8</div>     | <div>4 8 9</div>         | 1                    | <div>4 3<br/>8</div>     | <div>4 5<br/>7 8</div>   |
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| 3                        | <div>1 4 5<br/>7 9</div>     | <div>1 4 5<br/>7 9</div> | 6                          | <div>1 4<br/>7 8</div>       | <div>1 4<br/>8 9</div>   | 2                    | <div>4 8</div>           | <div>4 5<br/>7 8</div>   |
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|                        |                              |                      |                        |                      |                        |                        |                      |                |
|------------------------|------------------------------|----------------------|------------------------|----------------------|------------------------|------------------------|----------------------|----------------|
| <div>3 8</div>         | <div>4 8</div>               | 7                    | 5                      | 9                    | 1                      | <div>4 2 3<br/>4</div> | <div>2 4</div>       | 6              |
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| 9                      | <div>4 3<br/>6 4</div>       | <div>2 6</div>       | <div>2 4<br/>8</div>   | 7                    | <div>2 3<br/>8</div>   | <div>3 4 5</div>       | <div>4 5</div>       | 1              |
| 2                      | <div>1 5<br/>7 9</div>       | <div>5 9</div>       | <div>1 7<br/>9</div>   | <div>5 8</div>       | 4                      | 6                      | <div>1 8</div>       | 3              |
| <div>3 6<br/>7 9</div> | <div>1 3<br/>6 9</div>       | <div>6 9</div>       | <div>1 2<br/>7 9</div> | <div>2 3<br/>8</div> | <div>2 6<br/>9</div>   | <div>1 2<br/>4 9</div> | <div>1 2<br/>8</div> | 5              |
| 4                      | <div>1 3<br/>5 6<br/>9</div> | 8                    | <div>1 2<br/>6 9</div> | <div>2 3<br/>5</div> | <div>2 5 6<br/>9</div> | <div>1 2<br/>9</div>   | 7                    | <div>2 9</div> |
| <div>6 8<br/>8</div>   | <div>4 6<br/>8 9</div>       | <div>4 6<br/>9</div> | 3                      | <div>4 5</div>       | 7                      | <div>1 2<br/>5 9</div> | <div>1 2<br/>5</div> | <div>2 9</div> |
| 7                      | 2                            | 3                    | <div>8 9</div>         | 1                    | <div>5 8 9</div>       | <div>5 9</div>         | 6                    | 4              |
| 5                      | <div>4 9</div>               | 1                    | <div>2 6<br/>9</div>   | <div>2 4</div>       | <div>2 6<br/>9</div>   | 8                      | 3                    | 7              |

|                        |                        |                    |                          |                        |                      |                          |                              |                          |
|------------------------|------------------------|--------------------|--------------------------|------------------------|----------------------|--------------------------|------------------------------|--------------------------|
| <div>5 8 9</div>       | <div>1 6</div>         | 2                  | <div>4 5 6<br/>8 9</div> | <div>5 6<br/>8</div>   | <div>4 5<br/>8</div> | <div>4 5<br/>7 8 9</div> | <div>1 4 5<br/>7 8</div>     | <div>4 5<br/>8 9</div>   |
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| 7                      | 4                      | <div>8 9</div>     | <div>5 8 9</div>         | 2                      | 1                    | <div>5 8 9</div>         | 3                            | 6                        |
| 6                      | <div>3 7</div>         | 1                  | 2                        | 4                      | 9                    | <div>5 3<br/>7 8</div>   | <div>5 5<br/>7 8</div>       | <div>3 5<br/>8</div>     |
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| <div>4 2<br/>4</div>   | 8                      | 6                  | 3                        | 9                      | <div>4 5</div>       | 1                        | <div>2 4 5</div>             | 7                        |
| <div>4 2 3<br/>4</div> | 9                      | <div>4 7</div>     | 1                        | <div>5 7 8</div>       | 6                    | <div>4 5 3<br/>8</div>   | <div>2 4 5<br/>8</div>       | <div>2 3 4 5<br/>8</div> |

|             |                 |                 |                     |            |            |            |                 |                   |
|-------------|-----------------|-----------------|---------------------|------------|------------|------------|-----------------|-------------------|
| 1<br>4      | 1 2<br>6 5<br>9 | 1 2<br>4 6<br>9 | 3                   | 7          | 1 5        | 8          | 4 6<br>9        | 4 6               |
| 4           | 3               | 3               | 7                   | 2 6<br>9   | 2 6<br>9   | 5          | 4 3             | 1                 |
| 1<br>6<br>9 | 3<br>5<br>9     | 1<br>3<br>6     | 4                   | 8          | 1 5        |            | 3<br>9          | 2<br>7<br>6       |
| 5           | 1 2<br>8        | 1 2<br>6        | 1 2<br>7 8 9        | 1 2<br>4 6 | 3          | 4 2<br>7 9 | 4 6<br>8 9      | 4 6<br>7 8        |
| 1<br>8      | 3<br>6          | 1 2 3<br>6      | 1 2<br>5 6<br>7 8 9 | 1 2<br>5 6 | 2<br>8 9   | 2 3<br>7 9 | 3<br>5 6<br>8 9 | 2 3<br>5 6        |
| 7           | 2 3<br>8        | 9               | 2<br>5 6            | 2<br>4 5 6 | 2<br>4 6   | 1          | 4 5 6<br>8      | 2 3<br>4 5 6<br>8 |
| 2           | 6               | 1 3<br>4        | 1<br>5 8            | 1 3<br>4 5 | 4<br>8     | 4          | 3<br>7 9        | 9                 |
| 1<br>4      | 3<br>7          | 5               | 1 2<br>6            | 9          | 4 2<br>6   | 4          | 2 3<br>4 8      | 2 3<br>4 8        |
| 1<br>4      | 3<br>9          | 1<br>3<br>9     | 8                   | 1 2<br>4   | 1 2 3<br>6 | 7          | 6               | 1 3<br>4 5<br>2 3 |

|               |             |                 |          |          |              |            |            |               |
|---------------|-------------|-----------------|----------|----------|--------------|------------|------------|---------------|
| 2<br>4 5<br>8 | 2<br>6<br>8 | 2<br>4 5<br>8 6 | 7        | 4 2      | 1            | 9          | 3          | 2<br>4 5<br>6 |
| 1             | 3           | 4 5             | 9        | 8        | 6            | 4 2<br>7   | 2 5<br>7   | 2<br>4 5<br>7 |
| 2<br>4        | 7           | 2<br>4 6<br>9   | 3        | 4 2      | 5            | 4 2<br>6   | 8          | 1             |
| 6             | 1 2<br>4 8  | 5<br>9          | 1<br>5 8 | 1 5      |              | 2<br>4 7 8 | 2<br>7     | 3             |
| 2<br>7 8      | 1 2<br>8    | 1 2<br>7 8      | 1<br>8 6 | 3        | 4            | 5          | 9          | 2 6<br>8      |
| 5             | 4           | 3               | 2        | 5 6      |              | 1          | 6 4<br>7 8 |               |
| 2 3<br>4 7    | 5           | 1 2<br>4 6<br>7 | 1<br>6   | 1<br>7 9 | 8            | 2 3<br>6 7 | 1 2<br>6 7 | 2<br>6 9      |
| 2<br>7 8      | 9           | 1 2<br>7 8      | 1<br>5 6 | 1 5 6    | 3            | 2<br>7 8   | 6 4<br>7 8 | 2 5 6<br>7 8  |
|               | 3 1<br>8    | 1<br>6 7 8      | 6        | 4        | 1 5 6<br>7 9 | 2          | 3 1<br>6 7 | 5 6<br>7 8 9  |

|                     |            |            |            |                 |            |                |               |            |
|---------------------|------------|------------|------------|-----------------|------------|----------------|---------------|------------|
| 1<br>4 5<br>7       | 3<br>4 5   | 1 3<br>5 7 | 2          | 3 1<br>7 8      | 1 5<br>7 8 | 1 3<br>5 6     | 9             | 1 4<br>6 8 |
| 1<br>5              | 3<br>6     | 1 2 3<br>5 | 1<br>5 8   | 3<br>9          | 4          | 7              | 1 2<br>5 8    | 1 2<br>8   |
| 1<br>4 5<br>7       | 3<br>4 5   | 2 3<br>9   | 8          | 1<br>5 7        | 3<br>6     | 1 2 3<br>5     | 1 2<br>5 4    | 1 2        |
|                     | 3<br>8 9   | 1<br>6     |            | 3 2 3<br>7 8 9  | 2<br>7 8 9 | 4              | 2<br>7 8      | 5          |
|                     | 3<br>5 8   | 2 3<br>5 8 | 4          | 3<br>5 6<br>7 8 | 1<br>5 7   | 2<br>6         | 2<br>7 8      | 9          |
|                     | 5<br>8 9   | 7          | 2<br>5 9   | 5 6<br>8 9      | 4          | 2<br>5 8 9     | 1 2<br>6      | 3<br>8 6   |
| 1<br>7 8 9          | 6<br>8 9   | 1<br>7 9   |            | 1<br>7 8 9      | 5 3        | 1 2<br>6 9     | 4             | 1 2<br>6 7 |
| 1 3<br>4 5 6<br>7 9 | 3<br>4 5   | 1 3<br>9 7 | 1<br>4 5 9 | 2<br>6 7        | 1 2<br>7 9 | 8              | 1<br>5 6<br>7 | 1<br>6     |
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|              |              |            |              |              |              |          |            |                 |
|--------------|--------------|------------|--------------|--------------|--------------|----------|------------|-----------------|
| 8            | 1 3<br>9     | 1 6        | 4            | 7            | 1 3<br>6 9   | 2 6<br>9 | 5          | 1 2<br>9        |
| 1 2<br>6 9   | 1 2<br>9     | 4          | 1<br>6 8 9   | 1            | 5            | 3        | 1 6<br>8 9 | 7               |
| 1<br>6 9     | 3<br>7       | 5          | 2            | 1 3<br>9     | 1 3<br>6 8 9 |          | 4          | 1<br>8 9        |
| 1<br>4 6 7   | 1<br>6 4 8   | 9          | 1 3<br>5 6   | 1 3<br>4 5   | 1 3<br>6     |          | 2<br>7 8   | 4 5<br>8        |
| 1 2<br>4 6 7 | 1 2<br>4 6 8 | 1 2<br>7 8 | 1<br>5 6 9   | 1 2<br>4 5 9 | 1 2<br>6 9   |          | 6<br>7 8 9 | 3<br>4 5<br>8 9 |
| 5            | 4 2          | 3          | 7            | 8            | 2<br>6 9     | 1        | 6 4<br>9   |                 |
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| 1 3<br>4 7   | 1 3<br>4     | 3 1<br>8 9 | 1 3<br>7 8   | 1 2 3<br>9   | 1 2 3<br>8 9 | 5        | 1<br>9     | 6               |
| 1 2<br>9     | 5            | 1 2<br>8   | 1<br>8 9     | 6            | 7            | 4        | 1<br>8 9   | 3               |

|          |                 |              |            |                |              |                |            |          |
|----------|-----------------|--------------|------------|----------------|--------------|----------------|------------|----------|
| 5<br>8   | 1 3<br>4 5<br>7 | 9            | 2          | 1 3<br>5 8     | 1 3<br>8     | 4 5<br>7       | 6          | 1 5<br>7 |
| 6        | 1 3<br>7 5      | 1<br>7       | 4          | 1 3<br>5 9     | 1 3          | 2 3<br>5 7 9   | 2 3        | 8        |
| 2        | 1 3<br>4 5      | 1<br>4 8     | 7          | 1 3<br>5 6 8 9 | 3<br>6       | 4 5<br>4 9     | 3 1<br>5 9 |          |
| 5<br>8 9 | 4 5<br>4        | 2<br>8       | 5 6<br>9   | 2 3<br>8 6     | 7            | 4 5 6<br>8     | 1<br>5 9   |          |
| 5<br>8 9 | 1 4<br>5 7      | 1 2<br>4 7 8 | 1<br>5 6 9 | 1 2 3<br>6 8   | 1 2 3<br>4 6 | 4 5 6<br>7 8 9 | 3<br>5 7 9 |          |
| 3        | 6               | 1<br>4 7 8   | 1<br>5 9   | 1<br>8         | 1<br>4 8     | 4 5<br>7 8     | 4<br>7 8 9 | 2        |
| 7        | 2               | 3            | 8          | 4              | 9            | 1              | 5          | 6        |
| 1        | 9               | 6            | 3          | 7              | 5            | 2<br>8         | 2<br>8     | 4        |
| 4        | 8               | 5            | 1<br>6     | 1 2<br>6       | 1 2<br>6     | 9              | 3<br>7     | 3        |

|            |              |          |   |                |            |            |              |            |
|------------|--------------|----------|---|----------------|------------|------------|--------------|------------|
| 5<br>9     | 1 5<br>9     | 3        |   | 1 6<br>4 6 8 9 | 1<br>6 8 9 | 1<br>4 6 7 | 2 6<br>4 6 7 | 1 2<br>6   |
| 4          | 7            | 1<br>9   | 2 | 1 3<br>6       | 1 3<br>6 9 | 5          | 3<br>6       | 8          |
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| 2 3<br>6   | 2 3          | 7        | 5 | 9              | 4          | 8          | 1            | 2 3<br>6   |
| 1          | 4            | 2<br>8   |   | 2 3<br>6 7 8   | 2 3<br>6 8 | 9          | 5            | 2 3<br>6 7 |
| 2 3<br>8 9 | 2 3<br>6 9   | 5        | 1 | 2 3<br>7 6     | 2 3<br>6 8 | 3<br>4 7   | 2 3<br>6 4   | 2 3<br>6 7 |
| 2 3<br>5 9 | 1 2 3<br>5 9 | 4        |   | 6<br>9         | 8          | 7          | 1 3<br>6     | 3 1<br>5 6 |
| 5<br>7 9   | 1<br>5 9     | 1<br>6 9 | 3 | 1 2<br>5 6     | 1 2<br>6 9 | 1<br>7     | 6            | 8          |
| 5<br>7 9   | 3<br>8       | 1<br>6 9 | 4 | 1 5 6          | 1<br>6 9   | 2          | 3 1<br>6 5 6 | 3          |

|     |     |         |     |       |       |         |       |       |     |       |
|-----|-----|---------|-----|-------|-------|---------|-------|-------|-----|-------|
|     |     | 3       |     | 2 3   |       | 3       | 1     | 3     | 1 2 | 1 2 3 |
| 7 8 | 4 7 | 4 5 8 9 | 4 7 |       | 6     | 4 5 7 8 | 4 7 8 | 4 8 9 | 8 9 |       |
| 6   | 1   | 4 5 8   | 4 7 | 2 3   | 2 3   | 5       | 9     | 3     | 2   | 2 3   |
| 2   | 3   | 4       | 4 7 | 3     | 3     | 7 8     | 1     | 6     | 5   | 3     |
| 1   | 5   | 8       | 2 6 | 1 2   | 1 2   | 5       | 9     | 3     | 4   |       |
| 1   | 4 5 | 2       | 9   | 1 2 3 | 1 2 3 | 4 5 8   | 1     | 5     | 1   | 6     |
| 1   | 4 5 | 6       | 3   | 6     | 1     | 5 8     | 4 5 8 | 2     | 7   | 1     |
|     | 2   | 1 2     | 4 6 | 5     | 1     | 3       | 3     | 1     | 3   | 1 2 3 |
| 7 8 | 4 7 | 4 8     |     | 7     | 9     | 7       | 4     | 8     | 6   | 8 9   |
| 3   | 5   | 1       | 4 6 | 8     | 1     |         | 2     | 1     | 4   | 6     |
| 9   | 2   | 1 2     | 1   | 3     | 4     | 6       | 1     | 3     | 1 2 | 1 2 3 |
| 7   | 8   | 8       | 7   |       |       |         | 5     | 8     | 5   | 8     |

|       |       |     |       |       |     |     |     |     |       |       |
|-------|-------|-----|-------|-------|-----|-----|-----|-----|-------|-------|
|       | 6     |     | 6     | 2     |     | 1   | 5   | 9   | 3     | 1     |
| 7 8   | 7 8   | 3   | 4 5 6 | 3     | 7 8 | 6   | 2   | 1   | 3     | 1     |
| 7 8 9 | 7 8 9 | 7   | 7     | 4 5 6 | 7 8 | 3   | 2   | 8   | 6     | 4     |
| 1     | 3     | 6   | 4     | 6     | 9   | 4   | 6   | 4   | 7 8   | 5     |
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| 7     | 9     | 7   | 7     | 6     | 7 8 | 9   | 7   | 7   | 6     |       |
| 6     | 1 2   | 6   | 1     | 6     | 4   | 3   | 3   | 5   | 1 2   | 6     |
| 7     | 9     | 7   | 9     | 7     | 7   | 9   | 7   | 9   | 8     |       |
| 5     | 4     | 8   | 1     | 6     | 2   | 7   | 3   | 6   | 7     | 9     |
| 2     | 1     | 3   | 1     | 3     | 3   | 9   | 6   | 4   | 7     | 5     |
| 4     | 5     | 3   | 5     | 3     | 2   | 1   | 3   | 1   | 3     | 1 2 3 |
| 7 8   | 7 8   | 7   | 5     | 9     | 7 8 | 7 8 | 7 8 | 8 9 | 9     |       |
| 6     | 5     | 6   | 9     | 2     | 1   | 3   | 1   | 3   | 1 2 3 | 1 2 3 |
| 7 8   | 7 8   | 7 8 | 7 8   | 7 8   | 7 8 | 7 8 | 7 8 | 8   | 8     |       |

|     |       |     |       |     |     |     |     |     |     |     |
|-----|-------|-----|-------|-----|-----|-----|-----|-----|-----|-----|
|     | 3     | 4   | 5     | 2   | 2 3 | 9   | 4   | 6   | 1   |     |
| 7   | 1     | 8   | 3     | 7   | 1   | 3   | 8 9 | 5   | 2   |     |
| 6   | 8 9   | 7   |       | 4   | 8   | 7   | 8 9 | 7   | 3   |     |
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| 5   | 2     | 4   | 2     | 2   | 1   | 3   | 6   | 9   | 7 9 | 6   |
| 9   | 7     | 6   | 7 8 9 | 7 9 | 3   | 4   | 5   | 2   | 1   | 8   |
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| 1   | 3     | 5   | 1 2 3 | 1 2 | 2 3 | 4   | 3   | 4   | 6   | 9   |
| 7 8 | 7 8 9 | 7 9 | 7 9   | 7 9 | 7 9 | 7 9 | 7 9 | 7 9 | 7 9 | 7 9 |
| 1   | 3     | 1 2 | 1 2 3 | 1 2 | 2 3 | 5   | 4   | 7   | 4   | 6   |
| 8   | 8 9   | 8 9 | 8 9   | 6   | 5   | 4   | 8 9 | 8 9 | 8 9 | 8 9 |

|   |     |     |   |     |     |   |   |     |   |     |
|---|-----|-----|---|-----|-----|---|---|-----|---|-----|
| 4 | 5 6 | 5 6 | 3 | 5 6 | 2   | 6 | 2 | 1   |   |     |
| 3 | 7 8 | 7   | 9 | 1   | 2   | 6 | 5 | 4   | 2 | 6   |
| 2 | 1   | 5 6 | 7 | 4   | 5 6 | 8 | 3 | 6   | 9 | 9   |
| 1 | 9   | 3   | 5 | 8   | 7   | 2 | 6 | 4   |   |     |
| 7 | 4   | 8   | 6 | 2   | 1   | 9 | 5 | 3   |   |     |
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| 9 | 7   | 7   | 7 | 7   | 7   | 7 | 7 | 7   | 7 | 7   |
| 8 | 2   | 2   | 1 | 3   | 4   | 6 | 4 | 6   | 2 | 2   |
| 7 | 7   | 7   | 7 | 7   | 7   | 7 | 7 | 7   | 7 | 7   |
| 6 | 3   | 4   | 2 | 5 6 | 5 6 | 7 | 6 | 1   | 8 |     |

|       |     |     |     |       |     |       |     |       |     |       |
|-------|-----|-----|-----|-------|-----|-------|-----|-------|-----|-------|
| 3     | 4   | 5   | 6   | 7 8 9 | 1   | 2     | 2   |       |     |       |
| 6     | 1   | 2   | 5   | 4     | 4   | 3     | 4   | 4     | 6   | 3     |
| 8 9   | 7   | 6   | 3   | 2     | 2   | 5     | 1   | 4     | 6   | 8 9   |
| 6     | 7   | 6   | 1   | 7     | 2   | 5     | 4   | 4     | 6   | 3     |
| 8 9   | 7   | 8 9 | 8 9 | 7 8 9 | 8 9 | 7 8 9 | 8 9 | 7 8 9 | 8 9 | 7 8 9 |
| 2     | 6   | 6   | 1   | 7     | 2   | 5     | 4   | 4     | 6   | 3     |
| 4 5 6 | 3   | 4   | 6   | 1     | 2   | 7     | 4   | 5 6   | 8 9 | 8 9   |
| 2     | 5 6 | 5 6 | 7   | 4     | 2   | 3     | 2   | 5     | 1   |       |
| 9     | 8   | 8 9 | 8 9 | 8 9   | 8 9 | 8 9   | 8 9 | 8 9   | 8 9 | 8 9   |
| 1     | 2   | 8   | 3   | 5     | 4   | 6     | 4   | 7     | 9   |       |
| 7     | 6   | 3   | 2   | 2     | 6   | 4     | 1   | 4 5   | 4 5 | 8 9   |
| 4 5 6 | 5 6 | 4   | 6   | 7     | 8 9 | 3     | 2   | 4     | 6   |       |

|       |     |       |       |       |     |     |     |   |       |     |
|-------|-----|-------|-------|-------|-----|-----|-----|---|-------|-----|
| 5 6   | 9   | 4 5 6 | 2     | 2     | 2   | 5 6 | 3   | 2 | 1     |     |
| 7 8   | 1 2 | 5     | 3     | 1     | 2   | 5 6 | 4   | 8 | 5     | 2   |
| 7     | 5 6 | 7     | 8     | 9     | 9   | 9   | 7   | 9 | 7     | 9   |
| 5     | 1 2 | 2     | 1 2 3 | 2 3   | 5   | 5   | 4   | 6 | 4 5   | 2   |
| 7 8   | 4 5 | 4 5   | 8     | 9     | 8 9 | 7 9 | 7   | 9 | 7 9   | 7 9 |
| 3     | 2   | 7     | 5 6   | 4 5 6 | 8   | 4   | 2   | 1 | 4 5 6 |     |
| 1     | 4 5 | 4 5   | 5 6   | 4 5 6 | 2   | 9   | 4 5 | 3 | 4 5 6 | 3   |
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| 4 5 6 | 3   | 9     | 8     | 1 2   | 1   | 5 6 | 4   | 2 | 4     | 6   |



|               |          |               |               |             |              |               |             |               |
|---------------|----------|---------------|---------------|-------------|--------------|---------------|-------------|---------------|
| 2 3<br>9      | 5        | 6             | 7             | 1           | 2 3<br>8     | 2             | 2 3<br>8 9  | 4             |
| 4<br>8        | 4<br>8   | 2 3           | 2 3           | 6           | 9            | 1             | 5           | 7             |
| 7             | 2<br>9   | 1             | 4             | 5 3         | 2 5<br>8     | 6             | 2           | 2 3<br>8 9    |
| 2 3<br>5<br>9 | 6        | 2 3<br>5<br>9 | 5 3           | 8           | 4 5<br>4 5   | 2 3<br>7      | 1           |               |
| 1 3<br>5<br>8 | 1 3<br>8 | 3<br>5        | 1 3<br>5 6    | 2           | 1 3<br>4 5 6 | 4 5<br>8      | 3<br>6      | 9             |
| 1 2<br>5<br>8 | 1 2<br>8 | 4             | 1 5 6<br>9    | 3<br>5<br>9 | 7            | 2<br>5<br>8   | 2 6<br>8    | 2 3<br>5<br>8 |
| 1<br>4        | 1<br>6   | 2 3<br>5      | 1 2 3<br>5 6  | 7           | 1 2 3<br>5 6 | 2<br>5<br>8 9 | 2<br>5<br>8 | 2<br>5<br>8   |
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|               |                 |          |               |               |               |                   |             |            |
|---------------|-----------------|----------|---------------|---------------|---------------|-------------------|-------------|------------|
| 2<br>7 8 9    | 2<br>4<br>8 9   | 2<br>5   | 1 2<br>6<br>7 | 1 2<br>4<br>7 | 2<br>6<br>9   | 2<br>4 5 6<br>8   | 2<br>4<br>8 | 3          |
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| 2 3<br>6<br>9 | 2 3<br>5<br>9   | 1        | 4             | 2 3<br>6<br>9 | 2 3<br>6<br>9 | 5 3<br>7 8        | 3<br>8      | 5<br>7 8   |
| 5             | 6               | 8        | 1 2 3<br>7    | 1 2 3<br>7    | 4             | 2 3<br>7          | 2 3         | 9          |
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| 2 3<br>7      | 9               | 2 3<br>6 | 8             | 5             | 4             | 2 3<br>6<br>4     | 2 3         | 1          |

|                 |            |               |               |              |               |            |             |                 |
|-----------------|------------|---------------|---------------|--------------|---------------|------------|-------------|-----------------|
| 3               | 5          | 1<br>4<br>7   | 6             | 4<br>7 8 9   | 1<br>4<br>8 9 | 1 2<br>7   | 1 2<br>7    | 1<br>9          |
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| 1<br>6          | 9          | 1<br>7        | 1 2 3<br>7    | 5            | 1 2 3         | 4          | 8           | 1 3<br>6<br>7   |
| 1 2<br>8 9      | 2 3<br>7 8 | 1 3<br>7 9    | 3<br>7 8 9    | 2 3<br>7 8 9 | 5             | 1 2 3<br>8 | 1 3<br>7 8  | 3<br>6          |
| 4 5<br>8        | 6          | 4 5<br>7      | 3<br>7 8      | 1<br>8       | 2 3<br>5 8    | 9          | 5<br>7 8    | 3               |
| 1 2<br>5<br>8 9 | 2 3<br>7 8 | 1 3<br>7 9    | 4             | 2 3<br>7 8 9 | 6             | 1 2 3<br>8 | 1 2<br>7    | 1 3<br>5<br>7 8 |
| 7               | 1          | 8             | 2 3           | 6            | 2 3           | 9          | 5           | 4               |
| 2 5<br>6<br>9   | 2 3        | 3<br>5 6<br>9 | 1<br>8 9      | 4<br>8 9     | 1<br>4<br>8 9 | 7          | 1<br>6<br>8 | 1<br>6          |
| 5 6<br>9        | 4          | 5 6<br>9      | 1<br>5<br>8 9 | 7            | 1<br>5<br>8 9 | 3          | 2           |                 |

|            |        |               |               |             |             |                 |               |                   |
|------------|--------|---------------|---------------|-------------|-------------|-----------------|---------------|-------------------|
| 2          | 8      | 5<br>9        | 3<br>7        | 3<br>9      | 1<br>4<br>9 | 6               | 1<br>4<br>7   | 3<br>4 5<br>7     |
| 6<br>7     | 4      | 3<br>6<br>9   | 5             | 1<br>7      | 3<br>9      | 8               | 2             | 1<br>6<br>7       |
| 5 6<br>7   | 1      | 5 6           | 3<br>7 8      | 2 3<br>8    | 3<br>7      | 9               | 4 5 6<br>7    |                   |
| 5 6<br>8 9 | 2      | 1<br>5 6<br>9 | 4             | 1<br>8 9    | 1<br>7 9    | 1<br>6<br>8     | 3             |                   |
| 3          | 6<br>7 | 4<br>9        | 6<br>7 8 9    | 1<br>8 9    | 5           | 1 2<br>4 6<br>7 | 1<br>4 8<br>6 | 1 2<br>4 6<br>7 8 |
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| 1          | 5<br>3 | 7             | 2 3<br>6<br>9 | 3<br>6<br>9 | 4           | 2<br>6<br>8     | 5 6<br>8      | 2<br>5 6<br>8     |
| 4          | 5<br>3 | 8             | 1             | 3<br>6      | 2 3         | 9               | 7             | 2<br>5 6          |

|          |               |          |               |                     |                   |                    |                         |             |
|----------|---------------|----------|---------------|---------------------|-------------------|--------------------|-------------------------|-------------|
| 2<br>9   | 7             | 1<br>6   | 5             | 1<br>6<br>8 9       | 1 2<br>6<br>9     | 1 3<br>4<br>8      | 3 1<br>6<br>8           | 6           |
| 4        | 1 3<br>6      | 5        | 1 3<br>7 8    | 1 3<br>7 8          | 1 3<br>6          | 2                  | 9                       | 1<br>8<br>6 |
| 2<br>9   | 8             | 1 3<br>6 | 4             | 1 2 3<br>6<br>9     | 5                 | 5                  | 1<br>6                  |             |
| 1 3<br>8 | 6 4<br>6      | 2        | 1 3<br>4      | 1 3<br>6 4 5 6<br>9 | 1 3<br>4 5 6<br>8 | 5 6<br>8           | 7                       |             |
| 1 3<br>8 | 6 4<br>6      | 9        | 1 3<br>4<br>7 | 1 3<br>6 4 5 6      | 1 3<br>4 5 6<br>8 | 2 3<br>5 6<br>8    | 1 2<br>4<br>6           |             |
| 1 3<br>6 | 5             | 7        | 1 3<br>4      | 2                   | 8                 | 1 3<br>4<br>6<br>9 | 3 1<br>6<br>4<br>6<br>9 |             |
| 5        | 1 2<br>6<br>8 | 9        | 1<br>8        | 1 2<br>4            | 6<br>7 8          | 2<br>6<br>7 8      | 3                       |             |
| 3<br>6   | 2 3<br>6<br>9 | 4<br>8   | 2 3<br>4<br>8 | 3<br>8              | 7                 | 1<br>8 9           | 5                       |             |
| 7        | 1 2 3<br>9    | 1<br>8   | 6             | 5                   | 1 2 3<br>8 9      | 4                  | 2<br>8 9                |             |

|                   |               |            |               |             |             |                   |                 |                   |
|-------------------|---------------|------------|---------------|-------------|-------------|-------------------|-----------------|-------------------|
| 4 5<br>8 9        | 4 5<br>7 9    | 3          | 5 6<br>9      | 6<br>7 9    | 5<br>9      | 1                 | 2<br>4 5 6<br>8 | 2<br>4 6<br>7 8   |
| 1<br>4 5<br>8     | 6             | 1<br>4 5   | 2             | 3           | 1<br>5<br>7 | 9                 | 4 5<br>7 8      | 4<br>7 8          |
| 1<br>5<br>9       | 5<br>7 9      | 2          | 1<br>5 6<br>9 | 8           | 4           | 3<br>5 6<br>7     | 5 6<br>7        | 6                 |
| 4 5               | 1             | 9          | 4 5<br>3      | 2           | 6           | 4<br>8            | 7               | 4<br>8            |
| 7                 | 4 5<br>2 3    | 8          | 4 5<br>3      | 1           | 5<br>9      | 4<br>6<br>9       | 2 3<br>4 6<br>9 | 2<br>4 6<br>9     |
| 4<br>2<br>6 4     | 2 3<br>4      | 4          | 6<br>4        | 7           | 8           | 2 3<br>4<br>9     | 1               | 5                 |
| 1 2<br>4 5 6<br>9 | 2<br>4 5<br>9 | 7          | 1<br>6<br>8 9 | 4<br>6<br>9 | 3           | 2<br>4 5 6<br>8 9 | 2<br>4 5 6<br>8 | 1 2<br>4 6<br>8 9 |
| 3                 | 4 5<br>9      | 1<br>4 5 6 | 1<br>6<br>8 9 | 4<br>6<br>9 | 2           | 4 5 6<br>7 8 9    | 4 5 6<br>8      | 1<br>4 6<br>7 8 9 |
| 4<br>2<br>6 9     | 8             | 1<br>4 6   | 7             | 5           | 1<br>9      | 4<br>6<br>9       | 2<br>4 6        | 3                 |

|                 |                 |               |               |               |                 |              |              |               |
|-----------------|-----------------|---------------|---------------|---------------|-----------------|--------------|--------------|---------------|
| 4 5<br>9        | 4 5<br>8        | 2             | 1<br>5<br>8   | 5 6<br>8      | 5 6<br>8        | 7            | 3            | 1<br>4<br>9   |
| 4 5 6           | 4 5 6<br>8      | 3<br>8        | 1 3<br>5<br>8 | 9             | 7               | 2            | 4 5<br>8     | 1<br>4        |
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| 8               | 2<br>4 5<br>7   | 5             | 6             | 2 3<br>5      | 2<br>4 5<br>9   | 1            | 4 5<br>7 9   | 2 3<br>4<br>9 |
| 1 2<br>5 6<br>7 | 1 2<br>5 6<br>7 | 1<br>5 6<br>7 | 9             | 2<br>4 5 6    | 3               | 4<br>6       | 4<br>6       | 8             |
| 1 2<br>7        | 1 2<br>6<br>7 8 | 4             | 2<br>7 8      | 2<br>8        | 2<br>8          | 3            | 1<br>7 9     | 6<br>5        |
| 5 6<br>7        | 5 6<br>7 8      | 3<br>8 9      | 5             | 4 5 6<br>8    | 1               | 4<br>6 9     | 2<br>4 7     |               |

|     |       |     |     |     |       |     |       |       |
|-----|-------|-----|-----|-----|-------|-----|-------|-------|
| 4   | 6     | 5 6 | 9   | 2   | 3     | 1   | 2     | 2     |
| 7 8 | 7 8   | 7 8 | 8   | 5 8 |       |     | 5 6   | 5 6   |
| 2 3 | 1     | 3   | 2   | 4 5 | 4 5   | 2 3 | 2     | 2 3   |
| 5   | 6     | 5 6 | 7 8 | 8   | 7     | 4 5 | 4 5 6 | 4 5 6 |
| 8 9 | 7 8 9 | 7 8 |     |     |       |     | 8     | 7 8   |
| 2 3 | 3     | 3   | 1   | 6   | 2     | 2 3 | 2     |       |
| 5   |       | 5   | 4 5 | 4 5 | 4 5   | 4 5 | 4 5   | 9     |
| 8   | 7 8   | 7 8 | 7   |     | 7     |     | 8     |       |
| 7   | 5     | 2   | 6   | 4   | 4     |     | 3     | 1     |
|     |       |     | 8   | 8 9 | 6 9   |     |       |       |
|     | 4     | 4   | 3   | 2 3 | 1     | 2   | 7     | 2     |
| 8 9 | 8 9   | 6   | 4   | 4   | 4 5   | 9   | 4 5   | 8     |
|     | 3     | 1   | 3   |     | 2     |     | 2     | 2     |
|     | 4     | 4   | 5   | 7   | 4     | 6   | 4     | 8     |
| 8 9 | 8 9   | 8   |     |     | 9     |     | 8     |       |
| 6   | 2 3   | 3   | 3   | 1   | 8     | 7   | 1     | 2 3   |
| 4   | 4     | 5   | 4   |     |       |     | 9     | 4 5   |
|     | 2 3   | 3   |     | 3   |       |     |       |       |
| 1   | 4     | 4 5 | 6   | 4 5 | 4 5 6 | 8   | 2     | 2 3   |
|     | 7     | 7   | 7   | 9   | 7 9   |     | 4 5 6 | 4 5 6 |
|     | 3     | 3   |     | 1   | 3     | 3   | 1     | 3     |
| 5   | 4     |     | 2   | 4 5 | 4 5 6 | 4 5 | 4 5 6 | 4 5 6 |
| 8   | 7 8   | 9   |     | 7   | 7     |     |       |       |

|  |  |  |  |
|--|--|--|--|
| <div>2<br/>7 8 9</div> <div>5</div> <div>4<br/>8 9</div>               | <div>4<br/>8</div> <div>3<br/>4 8</div> <div>2<br/>4 8</div>           | <div>2 3<br/>7 8</div> <div>1</div> <div>2<br/>7 8 9</div>     | <div>6<br/>7 8 9</div>                                   |
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| <div>1 2<br/>7 8 9</div> <div>1 2<br/>6 4</div> <div>1<br/>6 4</div>   | <div>1<br/>4 5 8</div> <div>1 2<br/>4 5 8</div> <div>2<br/>4 7 8</div> | <div>3</div> <div>2<br/>7 8 9</div> <div>5 6<br/>7 8 9</div>   |  |
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| <div>5</div> <div>3<br/>8</div> <div>2</div>                           | <div>4 6</div> <div>4 6</div> <div>1</div>                             | <div>7 8</div> <div>7 8 9</div> <div>7 8 9</div>               | <div>3<br/>8</div> <div>3<br/>8</div>                    |
| <div>4</div> <div>1 2 3<br/>8</div> <div>7</div>                       | <div>1<br/>8</div> <div>1 2<br/>6 8</div> <div>5</div>                 | <div>9</div> <div>2 3<br/>8</div> <div>1<br/>8</div>           | <div>3<br/>8</div> <div>1<br/>8</div> <div>3<br/>8</div> |
| <div>1 2<br/>8 9</div> <div>1 2<br/>6 8 9</div> <div>1<br/>5 8 9</div> | <div>7</div> <div>3</div> <div>2<br/>4 8</div>                         | <div>2<br/>5 8</div> <div>2<br/>8</div> <div>1<br/>4 5 8</div> | <div>4 5<br/>7 8</div>                                   |
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|              |            |              |          |          |            |            |            |          |
|--------------|------------|--------------|----------|----------|------------|------------|------------|----------|
| 1 2 3<br>6 4 | 2 3<br>6 4 | 1 2 3<br>4 8 | 5        | 9        | 1 4<br>3   | 2<br>6     | 2 3<br>6 7 | 3<br>6   |
| 1<br>6 4     | 3<br>6 9   | 3<br>6 9     | 7        | 1 4      | 2<br>4     | 3<br>6 9   | 5          | 3<br>6 8 |
| 2 3<br>5 9   | 2 3<br>9   | 2 3<br>5     | 6        | 8        | 7          | 4          | 2 3<br>9   | 1        |
| 2 3<br>5 7   | 1<br>4 5   | 2 3<br>4 5   | 8        | 4 7      | 6 4        | 2 5        | 5 6<br>7 9 | 3<br>6 7 |
| 2<br>5 7     | 2<br>9     | 6            | 1<br>7   | 3        | 1 2<br>5   | 1<br>5 9   | 4          | 5<br>7 8 |
| 5<br>7       | 3<br>4 7   | 3<br>4 5 8   | 9        | 1 4<br>7 | 1 6<br>4 5 | 1<br>5 6 7 | 1 3<br>6 8 | 2        |
| 1 2 3<br>8   | 5          | 1 2 3<br>8   | 1 2<br>4 | 1<br>4   | 6          | 8          | 7          | 9        |
| 4<br>7       | 6<br>9     | 9            | 1<br>7   | 3        | 8          | 1 2<br>5 6 | 1 2<br>6   | 5 6      |
| 7<br>6       | 8          | 1 2<br>7     | 1 2<br>7 | 5        | 9          | 3          | 1<br>6     | 4        |

|            |            |            |            |                |              |              |   |          |        |          |
|------------|------------|------------|------------|----------------|--------------|--------------|---|----------|--------|----------|
| 4          | 3<br>8 9   | 3<br>5 8 9 | 3<br>4 5 9 | 2 3<br>5 6 8 9 | 7            | 5 6<br>8     | 1 | 4<br>8   | 4      | 2 3      |
| 2          | 1<br>7 8   | 3<br>5 8   | 1<br>4 5   | 3<br>5 8       | 3<br>4 8     | 1<br>5 8     | 9 | 6        | 4<br>7 | 3        |
| 6          | 1<br>7 8 9 | 3<br>4     | 3<br>9     | 2 3<br>8 9     | 2 3<br>4 8 9 | 1<br>8       | 5 | 4<br>7 8 | 4<br>7 | 2 3      |
| 4<br>7 8 9 | 3<br>8 9   | 3<br>4     | 3<br>9     | 3<br>7 8 9     | 1            | 2            | 6 | 4<br>7   | 5      |          |
|            | 3<br>7 9   | 1 2<br>5   | 1 2<br>5   | 4              | 3<br>6 9     | 3<br>7       |   | 3 1 2    | 8      |          |
|            | 3<br>4 7 8 | 1 2<br>6   | 1 2<br>6   | 3<br>7 8       | 5            | 3<br>7 8     |   | 3 1 2    | 9      |          |
| 1          |            | 2 3<br>6   | 2 3<br>6   | 3<br>5 6 7 8   | 3<br>8       | 3<br>5 6 7 8 |   | 4<br>7   | 9      | 4<br>7 6 |
| 5          | 4          | 7          |            | 1 2<br>6       | 2<br>6       | 9            | 8 | 3        | 1<br>6 |          |
|            | 3<br>9     | 3<br>6 9   | 8          | 1<br>7         |              | 3<br>6       | 4 | 2        | 5      | 1<br>7   |

|          |            |            |          |            |            |                  |              |          |
|----------|------------|------------|----------|------------|------------|------------------|--------------|----------|
| 6<br>8 9 | 2          | 7 8        | 1        | 4          | 7 8 9      | 5 6<br>7 9       | 5 6<br>7 8 9 | 3        |
| 5        | 3<br>7     | 6<br>1     | 7 8 9    | 2          | 7 8 9      | 6<br>7 9         | 4            | 6<br>7 8 |
| 6<br>8 9 | 4<br>7     | 3<br>6 7 8 | 3<br>4   | 5          | 6<br>7 8 9 | 6<br>7 9         | 2            | 1        |
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| 4<br>7   | 3<br>9     | 6          | 4<br>7   | 1<br>3     | 5          | 8                | 1<br>7       | 3<br>2   |
| 1        | 4 5<br>7   | 3<br>4 7 8 | 2<br>7 9 | 6          | 4<br>7     | 3<br>9 7 8 9     | 4<br>7 8     |          |
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| 2        | 4<br>7     | 6<br>7 8   | 3<br>7 9 | 4<br>8     | 1<br>7 9   | 6<br>8           | 5<br>7 8 9   |          |

|                          |                              |                          |                              |                            |                            |                          |                          |                            |
|--------------------------|------------------------------|--------------------------|------------------------------|----------------------------|----------------------------|--------------------------|--------------------------|----------------------------|
| 6                        | <div>1<br/>4<br/>7</div>     | <div>4 5<br/>7</div>     | 9                            | <div>1 4 5<br/>8</div>     | <div>1 5 3<br/>8</div>     | 2                        | <div>1 4 7<br/>3</div>   | <div>1 4 3<br/>8</div>     |
| 3                        | <div>1<br/>4<br/>7</div>     | <div>4 5<br/>7 9</div>   | <div>1<br/>4 5<br/>8</div>   | <div>1<br/>4 5<br/>8</div> | 2                          | <div>1<br/>4<br/>7</div> | <div>1<br/>4<br/>9</div> | <div>8 9</div>             |
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| 2                        | 5                            | <div>3<br/>4 7</div>     | <div>1 3<br/>4 6</div>       | 9                          | <div>1 3<br/>4 7</div>     | <div>1 3<br/>4 7</div>   | 8                        | <div>1 3<br/>4 6</div>     |
| <div>4<br/>7 8 9</div>   | <div>4 6<br/>7 9</div>       | 1                        | <div>3<br/>4 5 6<br/>8</div> | <div>4 5 6<br/>8</div>     | <div>3<br/>5 8<br/>7</div> | <div>3<br/>4 7</div>     | 2                        | <div>3<br/>4 6</div>       |
| <div>4<br/>8</div>       | <div>3<br/>4 6</div>         | <div>3<br/>4 6</div>     | 7                            | 2                          | <div>1 3<br/>8</div>       | <div>1 3<br/>4 6</div>   | 9                        | 5                          |
| <div>1<br/>4<br/>7</div> | <div>1<br/>4 6<br/>7 9</div> | <div>4 6<br/>7 9</div>   | 2                            | 3                          | <div>7 9</div>             | 8                        | 5                        | <div>1<br/>4 6<br/>9</div> |
| 1                        | 2                            | <div>3<br/>6<br/>9</div> | <div>5<br/>8</div>           | <div>5<br/>8</div>         | 4                          | <div>1 3<br/>4</div>     | <div>1 3<br/>6 9</div>   | 7                          |
| 5                        | <div>4<br/>7 9</div>         | <div>3<br/>8</div>       | <div>1 6<br/>7 9</div>       | <div>1 6<br/>7 9</div>     | <div>4 3<br/>9</div>       | <div>4 3<br/>9</div>     | 2                        |                            |

|    |      |      |     |       |      |     |       |       |
|----|------|------|-----|-------|------|-----|-------|-------|
| 46 | 8    | 9    | 137 | 2     | 1436 | 167 | 13567 | 13567 |
| 2  | 137  | 137  | 5   | 1367  | 9    | 4   | 1367  | 8     |
| 46 | 1357 | 1357 | 8   | 13467 | 1346 | 9   | 1367  | 2     |
| 1  | 6    | 2    | 9   | 8     | 7    | 5   | 4343  |       |
| 5  | 377  | 37   | 4   | 16    | 2    | 16  | 8     | 9     |
| 9  | 4    | 8    | 13  | 1356  | 1356 | 167 | 2     | 176   |
| 7  | 9    | 1456 | 2   | 145   | 8    | 3   | 1456  | 1456  |
| 3  | 2    | 145  | 6   | 1457  | 145  | 8   | 9     | 1457  |
| 8  | 15   | 1456 | 137 | 9     | 1453 | 2   | 14567 | 14567 |

|  |  |                           |   |   |  |   |  |   |
|--|--|---------------------------|---|---|--|---|--|---|
| 1                                      | <sup>4</sup> <sub>3</sub>              | 8                         | 9   | 2   | <sup>5</sup> <sub>6</sub> <sup>3</sup>   | <sup>7</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sub>5</sub> <sup>6</sup> <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>3</sup> |  |   |
| 7                                      | <sup>3</sup> <sub>9</sub>              | 5                         | 4   | 1   | <sup>3</sup> <sub>6</sub>  | 8   | <sup>2</sup> <sub>6</sub> <sup>2</sup> <sub>3</sub> <sup>6</sup> |   |
| 6                                      | 2                                      | <sup>4</sup> <sub>9</sub> | 8   | 7   | <sup>5</sup> <sub>3</sub> <sup>1</sup> <sub>5</sub> <sup>1</sup> <sub>5</sub> <sup>4</sup> <sub>5</sub> <sup>3</sup> |   |  |   |
| 8                                      | 5                                      | 6                         | 3   | <sup>4</sup> <sub>9</sub> <sup>4</sup> <sub>9</sub> | <sup>1</sup> <sub>2</sub> <sup>1</sup> <sub>2</sub>  | 7   |  |   |
| 9                                      | 1                                      | 3                         | 7   | 8   | 2  | <sup>5</sup> <sub>6</sub> <sup>4</sup> <sup>5</sup> <sub>6</sub>  |  |   |
| 4                                      | 7                                      | 2                         | 6   | 5   | 1  | 3   | 8  | 9 |
| <sup>2</sup> <sub>3</sub> <sup>5</sup> | 6                                      | <sup>1</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> <sup>3</sup> <sup>9</sup> | 8   | 4  | <sup>2</sup> <sub>7</sub> <sup>2</sup> <sub>5</sub> <sup>2</sup> <sub>5</sub>   |  |   |
| <sup>2</sup> <sub>5</sub> <sup>4</sup> | <sup>1</sup> <sub>9</sub> <sup>7</sup> | <sup>1</sup> <sub>2</sub> | 6   | <sup>4</sup> <sub>9</sub> <sup>7</sup>              | <sup>2</sup> <sub>5</sub> <sup>3</sup> <sup>8</sup>  |   |  |   |
| <sup>2</sup> <sub>3</sub>              | 8                                      | <sup>4</sup> <sub>9</sub> | 5   | <sup>4</sup> <sub>3</sub>                           | 7  | <sup>2</sup> <sub>6</sub> <sup>2</sup> <sub>6</sub> <sup>1</sup>  |  |   |

|            |              |            |              |            |                |              |            |              |
|------------|--------------|------------|--------------|------------|----------------|--------------|------------|--------------|
| 1 2<br>8 9 | 1 2<br>6 4   | 1 4<br>6   | 6 9<br>7 8 9 | 3          | 1 2<br>7 8 9   | 1 2<br>4 5 6 | 1 4<br>6 8 | 4 5 6<br>7 8 |
| 1<br>8 9   | 6<br>7       | 1 4<br>6 9 | 3 1<br>6 9   | 5          | 1<br>6 8 9     | 3 1<br>4 6   | 3 6<br>8   | 2            |
| 5          | 1 2<br>6     | 1 3<br>6   | 1 2<br>7 8   | 4          | 1 2<br>7 8     | 3 6<br>7     | 9          | 3 6<br>7 8   |
| 4          | 1 5<br>8     | 1 5        | 6            | 1 2<br>7 8 | 1 2 3<br>5 7 8 | 9            | 2 3<br>8   | 3 5<br>8     |
| 7          | 9            | 5 6        | 2 4<br>5 8   | 2 8        | 2 3<br>5 8     | 2 3<br>4 5 6 | 2 3<br>4 6 | 1            |
| 3          | 1 5 6<br>8   | 2          | 1 4 5<br>8 9 | 1 8        | 1 5 8<br>9     | 4 5 6        | 7          | 4 5 6<br>8   |
| 1 2<br>6   | 1 2 3<br>5 6 | 7          | 1 2<br>5     | 9          | 4              | 8            | 2 3<br>6   | 3 6          |
| 2<br>6 9   | 2 4 5<br>6   | 4 5 6<br>9 | 3            | 2 6<br>7 8 | 2 5<br>7 8     | 1            | 4 6<br>7   | 4 6<br>7 9   |
| 1 2<br>6 9 | 1 2 3<br>4 6 | 8          | 1 2<br>7     | 1 2<br>7 6 | 1 2<br>7       | 2 3<br>4 6   | 5          | 3 6<br>4 7 9 |

|               |               |               |                 |              |                 |          |            |            |
|---------------|---------------|---------------|-----------------|--------------|-----------------|----------|------------|------------|
| 7             | 4 5<br>8      | 1 2<br>5<br>8 | 1 2 3<br>4      | 2 3<br>8     | 2 3<br>4        | 9        | 6          | 4 2 3      |
| 2<br>4 6<br>8 | 4 6<br>8 9    | 2<br>8 9      | 2 3<br>4 6<br>7 | 2 3<br>7 8 9 | 5               | 2<br>4 7 | 2 3<br>7   | 1          |
| 3             | 4 6<br>9      | 1 2<br>9      | 1 2<br>4 6<br>7 | 2<br>7 9     | 2<br>4 6<br>7 9 | 5        | 8          | 2<br>4 7   |
| 2<br>4 5<br>8 | 4 5<br>8      | 6             | 9               | 1            | 2<br>7          | 3        | 2 5<br>7   | 2<br>7 8   |
| 2<br>5        | 1             | 2 3<br>5      | 2 3<br>5 6<br>7 | 2 3<br>5     | 8               | 2<br>6 7 | 4          | 9          |
| 9             | 7             | 2 3<br>5<br>8 | 2 3<br>5 6      | 4            | 2 3<br>6        | 1        | 2 5<br>8   | 2 6        |
| 1             | 3<br>5<br>8 9 | 5<br>7 8 9    | 2<br>4 5        | 6            | 2<br>4          | 2<br>7 8 | 2 3<br>7 9 | 2 3        |
| 6<br>8        | 2             | 4             | 3<br>7          | 3<br>7 9     | 3<br>7 9        | 6<br>8   | 1          | 5          |
| 5 6           | 3<br>5 6<br>9 | 5<br>7 9      | 8               | 2<br>5       | 1               | 2<br>4 7 | 2 3<br>7 9 | 2 3<br>4 6 |

|                               |                               |                        |                        |                        |                        |
|-------------------------------|-------------------------------|------------------------|------------------------|------------------------|------------------------|
| 3 <sup>5 6</sup> <sub>7</sub> | 4 <sup>1 5</sup> <sub>9</sub> | 1 <sup>5 7 9</sup>     | 2 <sup>4 5 7</sup>     | 8 <sup>1 4 5 6</sup>   | 3 <sup>1 4 5</sup>     |
| 1 <sup>2 5 6</sup>            | 8 <sup>1 2 5</sup>            | 4 <sup>3 4 5 7</sup>   | 9 <sup>1 6 7</sup>     | 1 <sup>2 4 5 8</sup>   | 3 <sup>1 4 5</sup>     |
| 1 <sup>2 7</sup>              | 3 <sup>8 9</sup>              | 4 <sup>1 4 7 9</sup>   | 6 <sup>1 2 4 7 9</sup> | 5 <sup>1 2 4 8</sup>   | 7 <sup>1 2 4 8</sup>   |
| 9 <sup>5 6</sup>              | 5 <sup>6 8</sup>              | 3 <sup>1 3 4 7</sup>   | 1 <sup>2 4 7</sup>     | 1 <sup>2 4 7</sup>     | 1 <sup>2 4 8</sup>     |
| 1 <sup>2 7</sup>              | 4 <sup>1 2 7</sup>            | 8 <sup>9</sup>         | 6 <sup>7 8 9</sup>     | 5 <sup>7 9</sup>       | 3 <sup>7 9</sup>       |
| 8 <sup>1 5 9</sup>            | 2 <sup>4 5 6 9</sup>          | 3 <sup>1 5 9</sup>     | 1 <sup>3 8</sup>       | 2 <sup>1 3 6 9</sup>   | 7 <sup>1 5 6 8 9</sup> |
| 4 <sup>1 5 6 9</sup>          | 7 <sup>1 5 9</sup>            | 1 <sup>3 4 5 6 9</sup> | 8 <sup>1 4 5 9</sup>   | 2 <sup>1 4 5 6 9</sup> | 5 <sup>1 4 5 9</sup>   |

|              |                |                 |                  |                |              |                |                    |            |
|--------------|----------------|-----------------|------------------|----------------|--------------|----------------|--------------------|------------|
| 5 6<br>8     | 1 4 5 6<br>8   | 7               | 1 4 3<br>8 6     | 2              | 1 4 3<br>4   | 3              | 9                  | 4 3<br>8 6 |
| 2 6<br>8 9   | 1 2 4 6<br>8 9 | 6               | 1 3 4 6<br>7 8 9 | 7 6 4<br>7 8 9 | 1 3 4<br>7 9 | 5              | 3 2 3<br>7 8 6 4 6 |            |
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| 2 3<br>7 8   | 6 7 8          | 2 3<br>8        | 3 4 6<br>7 8 9   | 1 5            | 4 2 3<br>9   | 3 4 8 9        |                    |            |
| 4            | 5 6<br>8       | 2 3<br>5 6<br>8 | 3 6<br>8 9       | 2 3<br>8 9     | 1 2 3<br>9   | 1 3<br>5 8     | 7                  |            |
| 1            | 5 7 8          | 9               | 4 7 8            | 7 8            | 4 7          | 2 3<br>6 5 4 8 |                    |            |
| 3 1<br>7 9   | 5 5<br>7 9     | 1 5<br>9        | 5 7 9            | 4 6            | 8 2          | 3 9            |                    |            |
| 3 1<br>7 8 9 | 6 6<br>7 8 9   | 1 3<br>8 6      | 2 7 9            | 7 9            | 1 3<br>7 9   | 4 5            |                    |            |
| 5 7          | 2 9            | 4               | 1 5<br>7 9       | 3 8            | 1 7          | 1 6<br>6 9     |                    |            |

|          |            |              |              |              |              |              |              |            |
|----------|------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|
| 1 3<br>5 | 6 4<br>8 9 | 1 2 3<br>7 9 | 1 2 3<br>5 7 | 5 6<br>9     | 1 2<br>8 9   | 2 3<br>6 9   | 1 2<br>6 9   |            |
| 1 3<br>5 | 2          | 6 9          | 1 3<br>9     | 5 8          | 1 4<br>9     | 7            | 1 4<br>6 9   |            |
| 1 3      | 7          | 6 8 9        | 4            | 1 2 3        | 6 9          | 5            | 2 3<br>6 9   | 1 2<br>6 9 |
| 9        | 4 5 6<br>7 | 2 6<br>7     | 3 6<br>7     | 4 5 6<br>7   | 1 4<br>7     | 2 8<br>7     | 4 5<br>7     |            |
| 8        | 3          | 7 6          | 6 7          | 4 5 6<br>9 7 | 2 1 4<br>7 9 | 4 5<br>9     | 1 4 5<br>7 9 |            |
| 4 2<br>7 | 4 5        | 1            | 7 8 9        | 4 5<br>7 8   | 5 9          | 6 4 5<br>9   | 2 3<br>6 9   |            |
| 6 4<br>7 | 8 9        | 2 7 8 9      | 5 8          | 3 4<br>7 8 9 | 1 4<br>7 8 9 | 1 4<br>7 8 9 | 2 6<br>7 8 9 |            |
| 2 7      | 1 8 9      | 5 8 9        | 1 2<br>8     | 1 2<br>8     | 6 4<br>9     | 3 2<br>9     | 6 7 8 9      |            |
| 4 2<br>4 | 1 4<br>8   | 3            | 1 2<br>8     | 6 9 7        | 4 2<br>8     | 2 4 5 6<br>8 | 2 4 5 6<br>8 |            |

|          |              |       |            |            |              |     |  |  |
|----------|--------------|-------|------------|------------|--------------|-----|--|--|
| 1 8 9    | 3            | 2     | 4 8 9      | 6          | 5 7 8        | 1 7 |  |  |
| 1 8      | 7 6          | 5     | 1 3<br>7   | 2 1 3<br>7 | 9 8          | 6 4 |  |  |
| 8 9      | 7 6          | 4     | 5 8 9      | 7          | 3 2          | 1 6 |  |  |
| 2 1<br>9 | 7 9          | 8     | 1 3<br>7   | 5 1 3<br>7 | 4 1 6<br>7 9 | 1 6 |  |  |
| 5 4      | 1 3<br>7 9   | 6 7   | 1 3<br>7   | 1 3<br>7   | 8 7 9        | 2   |  |  |
| 6 8      | 1 7          | 2 4 9 | 1 7        | 5 3        |              |     |  |  |
| 3 2      | 1 9          | 7 9   | 5 8        | 6 4        | 1 7 9        |     |  |  |
| 4 5      | 6 1 3<br>7 9 | 7     | 2 1 3<br>7 | 1 7        | 1 9          | 8   |  |  |
| 7 1<br>9 | 8 1          | 6 4   | 2 3        | 5          |              |     |  |  |

|          |            |     |       |     |            |          |     |   |
|----------|------------|-----|-------|-----|------------|----------|-----|---|
| 7 4<br>9 | 6          | 5   | 1     | 3   | 4 8        | 4 8 9    | 2   |   |
| 1 4      | 1 3<br>4 9 | 2   | 8 6 4 | 7 9 | 7 4        | 5 4      | 3 9 |   |
| 5 4      | 3 9        | 8   | 7 4   | 2 9 | 4 3        | 1 6      |     |   |
| 3 6      | 7          | 9   | 2     | 5   | 1 4<br>8   | 4 8      | 1 4 |   |
| 9        | 2          | 5   | 4     | 8   | 1 3<br>6 7 | 3 6<br>7 | 3 7 |   |
| 4 8      | 4 8        | 1   | 6     | 3   | 7          | 9        | 2   | 5 |
| 6 7      | 3 9        | 1   | 5 4   | 2 9 | 2 4        | 3 8      |     |   |
| 2 5      | 4          | 3   | 7     | 8   | 1 6<br>9   | 6 9<br>9 | 1 9 |   |
| 1 8      | 1 8        | 3 9 | 2 4   | 6 9 | 5 4 7      | 3 4 7    |     |   |

|                |                  |                |              |            |                |  |  |  |
|----------------|------------------|----------------|--------------|------------|----------------|--|--|--|
| 1 2 3<br>4 7   | 2 3 1 3<br>6 4 7 | 2 4 5 6<br>7   | 8 4 5 6<br>7 | 9 7 5      | 2 3 1 3<br>5 5 |  |  |  |
| 1 2 3<br>4 7 8 | 2 3 1 3<br>6 4 7 | 9 4 5          | 2 4 5 6<br>7 | 5 3 7      | 2 3 1 3<br>5 5 |  |  |  |
| 9              | 2 5<br>7         | 3 7            | 1 4          | 8 6        |                |  |  |  |
| 2 3<br>7 8     | 1 6 4 5          | 2 3<br>4 5 7   | 9 7 8        | 5 3 7      | 4 5 3<br>4 8   |  |  |  |
| 5 3<br>7       | 4 9              | 5 7            | 6 8          | 1 2        |                |  |  |  |
| 2 3<br>7 8     | 2 3 3<br>5 7     | 1 4 5<br>7     | 2 4 5<br>7   | 6 9        | 4 5 3<br>8     |  |  |  |
| 1 3<br>4 5     | 3 1 3<br>4       | 2 4 5<br>8     | 9 4 5        | 5 3 8      | 6 7            |  |  |  |
| 6 7            | 5 9              | 8 7            | 1 3          | 2 4 5      | 4 5 9          |  |  |  |
| 4 5<br>7       | 3 5 9            | 2 4 5 6<br>7 8 | 4 5 7        | 4 5 6<br>7 | 1 4 5<br>8 9   |  |  |  |

|                    |                |                |              |                |                |            |            |          |
|--------------------|----------------|----------------|--------------|----------------|----------------|------------|------------|----------|
| 9                  | 5              | 1 6            | 2 6<br>8     | 1 2<br>7 8     | 1 2<br>6 7 8   | 1 4 6      | 3 4 8      | 1 2<br>6 |
| 3 2 3<br>8         | 7 8            | 2 5 6<br>8     | 4 8          | 1 2 3<br>5 6 8 | 9 1 2<br>5 6 8 | 1 2<br>5 6 | 1 2<br>5 6 |          |
| 4 3 2 3 1<br>8 4 8 | 6 9 1 2 6<br>8 | 1 2 3<br>5 6 8 | 1 5 6<br>9 7 | 3 6 4<br>7     | 7 5 6<br>8     | 1 2<br>5 6 | 1 2<br>5 6 |          |
| 2 3<br>4 5         | 6 4 3          | 7 8 1 2<br>4   | 1 5 3 1<br>5 | 9 5 6<br>8     |                |            |            |          |
| 4 5<br>8           | 7 4 8 9        | 3 1 6 4<br>9   | 2 1 5 6<br>9 | 5 6 9          | 2 1 5 6<br>8   | 1 5 6<br>8 | 1 5 6<br>8 |          |
| 2 3<br>8           | 1 8 9          | 2 6 5<br>9     | 3 6 4<br>7   | 4 5 3<br>6     | 4 7 8          |            |            |          |
| 6 4 3<br>8         | 4 5 3<br>8     | 1 2 5<br>7 8   | 4 5 3<br>7   | 9 4 5<br>7     | 2 3<br>4 5     |            |            |          |
| 7 4<br>9           | 4 5            | 2 4 5 6<br>9   | 3 5 6<br>9   | 8 1 2<br>5 6   | 4 5 6<br>7     |            |            |          |
| 1 4<br>8 9         | 2 4 5 6<br>8   | 6 7 9 7 8 9    | 5 6 7 8 9    | 4 5 6<br>7     | 5 6 4 5 6<br>7 |            |            |          |

|             |             |        |          |          |                 |                   |                 |            |
|-------------|-------------|--------|----------|----------|-----------------|-------------------|-----------------|------------|
| 2<br>7      | 2 3         | 3<br>7 | 9        | 5<br>8   | 1               | 5<br>8            | 4               | 6          |
| 8           | 1           | 5      | 4<br>2 6 | 2<br>6 4 | 2<br>6          | 3                 | 9               | 7          |
| 6<br>9      | 6<br>9      | 4      | 3<br>7   | 5<br>8   | 3<br>7          | 1 2<br>5<br>8     | 2<br>8          | 1 2<br>5   |
| 2<br>5 6    | 2<br>5 6    | 1      | 8        | 3        | 2<br>4 5 6<br>7 | 2<br>4 5 6<br>7   | 2<br>6<br>7     | 9          |
| 3           | 4           | 9      | 2<br>7 6 | 2<br>6   | 2<br>5 6<br>7   | 2<br>5 6<br>7     | 1               | 8          |
| 2<br>5 6    | 7           | 8      | 4<br>2 6 | 1        | 9               | 2<br>4 5 6        | 2 3<br>6 4      | 2 3<br>4 5 |
| 1<br>4<br>7 | 3<br>8<br>7 | 3      | 5        | 9        | 2 3<br>6        | 1 2<br>4 6<br>7 8 | 2 3<br>6<br>7 8 | 1 2 3<br>4 |
| 1<br>7      | 5<br>3      | 2      | 1<br>3 6 | 4        | 8               | 9                 | 3<br>6<br>7     | 1 3        |
| 1<br>4<br>9 | 3<br>8 9    | 6      | 1 2 3    | 7        | 2 3             | 1 2<br>4<br>8     | 5               | 1 2 3<br>4 |

|       |     |       |     |     |   |     |       |       |     |
|-------|-----|-------|-----|-----|---|-----|-------|-------|-----|
| 1 2   | 1 2 | 2     | 6   | 5 9 | 4 | 8   | 5 9   | 3     |     |
| 7     | 7   | 7     |     | 2   | 1 | 3   | 2     | 2     | 4   |
|       | 3   | 4     | 9   | 7 9 | 2 | 2 5 | 1     | 2 5 6 | 5 6 |
| 1 2 3 | 1 2 |       | 6   | 4 9 | 8 | 5   | 2     | 1 2   | 1   |
| 7     | 7   |       |     |     |   |     | 9     | 9     | 9   |
| 1 2   | 9   | 4     | 2   | 4   | 6 | 7   | 3     | 1 2   | 1   |
| 5     | 2   | 2 3   | 2 3 | 2   | 1 | 7   | 4     | 2 6   | 6   |
| 2     | 6   | 2 5   | 1   | 8   | 4 | 9   | 9     | 8 9   | 8 9 |
| 7 8   |     | 7 8   |     |     |   |     |       |       |     |
| 4     | 7 8 | 1     | 5   | 3   | 2 | 6   | 7 8 9 | 7 8 9 |     |
| 9     | 3   | 5 7 8 | 1   | 4   | 6 | 4 5 | 1     | 7 8   | 2   |

|       |       |       |     |     |     |     |     |       |       |
|-------|-------|-------|-----|-----|-----|-----|-----|-------|-------|
| 1 2 3 | 2     | 3     | 4   | 5   | 6   | 1   | 3   | 1     |       |
| 7 9   | 7 9   | 7 9   |     |     |     | 7 8 | 7 8 | 7 9   |       |
| 1 3   | 4     | 5 6   | 3   |     | 3   | 1   | 6   | 2     | 1     |
| 7 9   |       | 7 9   | 8 9 | 8 9 | 7 8 | 7   |     | 7 9   | 6     |
| 7     | 3     | 6     | 8   | 2 3 | 1   | 2 3 | 5   | 4 6   | 4 6   |
| 7 9   | 7 9   |       |     | 9   | 7   |     |     | 7 9   |       |
| 8     | 1     | 4 5   | 6   | 4   | 2   | 4 5 | 9   | 4 5   | 3     |
| 4 5   | 3     | 5     | 4 5 | 3   | 1   | 7   | 1   | 4     | 2     |
| 6     | 5     | 2     | 5   | 3   | 4   | 4 5 | 3   | 1     | 8     |
| 2 4 5 | 2 5   | 1     | 2 5 | 6   | 4 5 | 8   | 3   | 4 5   | 4 5   |
| 7 9   | 7 8 9 |       | 8   |     |     |     |     |       |       |
| 2 4 5 | 3     | 4 5 6 | 1 2 | 5   | 4   | 1 2 | 4 5 | 8     | 2     |
| 7     |       |       | 8   |     |     | 7 8 | 9   | 4 5 6 |       |
| 2 4 5 | 2     | 5 6   | 7   | 3   | 9   | 1 2 | 4   | 5 6   | 1 2   |
| 8     |       |       |     |     |     | 8   |     |       | 4 5 6 |

|     |     |     |   |       |     |       |       |   |   |
|-----|-----|-----|---|-------|-----|-------|-------|---|---|
| 1   | 2   | 2 3 | 4 | 5     | 1   | 1 2 3 | 1     | 3 | 7 |
| 8 9 |     | 6   |   |       | 8   | 9     | 8     |   |   |
| 1   | 4   | 7   | 9 | 2 3   | 1   | 2 3   | 6     | 5 |   |
| 1   | 5   | 2 3 | 2 | 1 2 3 | 6   | 7     | 1 2 3 | 1 | 3 |
| 8 9 |     | 6   |   | 8     |     |       | 9     | 8 | 9 |
| 2   | 1   | 6   | 3 | 1     | 6   | 4 5   | 4 5   | 1 |   |
| 7 9 | 7 9 |     |   | 7 8   | 8 9 |       |       | 9 |   |
| 5   | 3   | 1   | 4 | 2     | 1 2 | 1     | 6     | 1 | 3 |
|     | 7 9 |     |   | 7     |     | 9     |       | 7 | 8 |
| 5   | 3   | 1   | 8 | 5 6   | 1   | 6     | 1     | 3 | 1 |
|     | 7 9 |     |   | 7     |     |       | 9     | 7 |   |
| 4   | 1 2 | 1 2 |   | 6     | 4   | 6     | 5     | 8 | 9 |
| 7   |     |     |   | 7     |     |       |       |   |   |
| 6   | 8   | 5   | 1 | 9     | 3   | 7     | 2     | 4 |   |
| 4   | 3   | 9   | 8 | 4     | 2   | 1     | 5     | 1 | 5 |
| 7   |     |     |   | 7     |     |       |       |   | 6 |

|       |       |     |     |       |     |       |     |     |     |
|-------|-------|-----|-----|-------|-----|-------|-----|-----|-----|
| 1 2   | 1 2 3 | 1   | 3   | 2 3   | 5   | 1 2 3 | 1 2 | 6   | 2 3 |
| 4     | 4     | 4   |     | 4     | 8 9 |       | 7 9 |     | 7 9 |
| 1 2   | 1 2 3 | 1   | 3   | 2 3   | 2 3 | 1 2 3 | 1 2 | 4   | 2 3 |
| 8     | 7 8   | 7 8 |     | 8 9   |     |       | 7 9 |     | 7 9 |
| 1 2   |       | 9   | 5   | 2 3   | 7   | 6     | 1 2 | 8   | 2 3 |
| 4     |       |     |     | 4     |     |       |     |     |     |
| 2 5   | 6     |     |     | 2 5   | 1   | 9     | 4   | 3   | 5   |
| 8     |       | 7 8 |     |       |     |       |     | 7 8 |     |
| 3     | 1 2   | 1   |     | 2 5 6 | 4   | 6     | 7   | 5 6 | 5 6 |
| 4 5   | 4 5   | 4   |     | 3     | 5 6 | 4     | 8   | 2   | 1   |
| 9     | 7     |     |     | 5 6   | 4   | 6     |     |     |     |
| 7     | 5     |     | 6   | 2     | 6   | 4     | 3   | 1   | 2   |
|       | 8     |     | 8 9 | 6 9   |     |       |     | 5 6 | 8 9 |
| 4 5 6 | 4 5   | 3   | 2   | 1     | 3   | 5     | 7   | 5 6 |     |
| 8 9   | 8     |     |     |       | 6 9 |       |     | 8 9 |     |
| 1     | 5 6   | 1   | 3   | 1     | 3   | 7     | 8   | 2 3 | 5   |
| 9     |       |     |     |       |     |       |     |     | 4   |

|     |     |     |     |       |     |     |     |     |   |
|-----|-----|-----|-----|-------|-----|-----|-----|-----|---|
| 9   | 2 3 |     | 4 5 | 6     | 4   | 3   | 1   | 2   | 3 |
|     | 4 5 | 4   | 7 8 | 4 5   | 8   |     | 4 5 | 4 5 | 8 |
| 2   | 2 3 |     | 4 5 | 4     | 3   | 1   | 2 3 | 9   | 3 |
| 7 8 | 7   | 7 8 | 4 5 | 8     | 7   |     | 8   | 4 5 | 8 |
| 1   | 1   | 3   | 4   | 2     | 4   | 9   | 4 5 | 7   | 6 |
| 8   | 4 5 | 4   | 8   |       |     |     | 8   |     |   |
| 1   | 1   | 2   | 3   | 8     | 5   | 4   | 6   | 9   |   |
| 7   | 4   | 7   |     |       |     |     |     |     |   |
| 5   | 3   | 8   | 4   | 9     | 6   | 4 5 | 3   | 1   | 2 |
|     |     |     |     |       |     |     |     |     |   |
| 5   | 3   | 6   | 9   | 1     | 4   | 4   | 4   | 5   | 3 |
|     |     |     |     |       |     |     |     |     |   |
| 4   | 1   | 3   | 6   | 1 2   | 2   | 2   | 1 2 | 1   | 5 |
|     | 7 9 |     |     | 9     | 8 9 | 7 8 | 4   | 7 8 |   |
| 1 2 | 1 2 | 5   | 7   | 1 2 3 | 2 3 | 6   | 1 2 | 1   |   |
| 8   |     | 9   |     | 4     | 8 9 |     | 4   | 8   |   |
| 1 2 | 1 2 | 1   | 6   | 1     | 4   | 5   | 9   | 3   | 1 |
| 7 8 | 7   | 7 8 | 8   |       |     |     | 7 8 |     |   |

|                             |                               |                               |                             |                             |                               |                               |                           |                             |
|-----------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------|-----------------------------|
| 8                           | <sup>1</sup> <sub>7</sub> 5   | 2                             | 6                           | <sup>1</sup> <sub>7</sub> 5 | 4                             | <sup>1</sup> <sub>7</sub> 5   | 9                         | 3                           |
| <sup>1</sup> <sub>9</sub> 3 | <sup>1</sup> <sub>4</sub> 5 3 | <sup>1</sup> <sub>9</sub> 3   | 2                           | 7                           | <sup>3</sup> <sub>8</sub> 9   | 6                             | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>4</sub>   |
| <sup>1</sup> <sub>9</sub> 3 | <sup>1</sup> <sub>6</sub> 4 5 | <sup>1</sup> <sub>7</sub> 3   | <sup>1</sup> <sub>9</sub> 3 | <sup>1</sup> <sub>5</sub>   | <sup>3</sup> <sub>9</sub>     | <sup>3</sup> <sub>7</sub> 8   | 2                         | <sup>1</sup> <sub>4</sub> 7 |
| 5                           | <sup>1</sup> <sub>2</sub> 3   | <sup>1</sup> <sub>9</sub>     | 4                           | <sup>1</sup> <sub>2</sub>   | 6                             | <sup>1</sup> <sub>7</sub> 2 3 | <sup>3</sup> <sub>7</sub> | 8                           |
| <sup>1</sup> <sub>2</sub>   | <sup>1</sup> <sub>6</sub> 2   | <sup>1</sup> <sub>8</sub> 9   | 3                           | <sup>1</sup> <sub>8</sub> 2 | 7                             | <sup>1</sup> <sub>9</sub> 2   | 4                         | 5                           |
| 7                           | <sup>1</sup> <sub>8</sub> 2 3 | 4                             | 9                           | <sup>1</sup> <sub>5</sub> 2 | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>2</sub> 3   | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> 6 |
| 4                           | <sup>1</sup> <sub>7</sub> 2 3 | <sup>1</sup> <sub>9</sub> 3   | 8                           | <sup>3</sup> <sub>9</sub>   | <sup>1</sup> <sub>2</sub> 3 5 | <sup>2</sup> <sub>7</sub> 3 5 | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>9</sub> 6 |
| <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>9</sub> 6   | <sup>1</sup> <sub>7</sub> 8 9 | <sup>1</sup> <sub>5</sub>   | 4                           | <sup>1</sup> <sub>2</sub> 3 5 | <sup>2</sup> <sub>7</sub> 8   | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>9</sub>   |
| <sup>2</sup> <sub>3</sub>   | <sup>2</sup> <sub>9</sub> 3   | 5                             | 7                           | 6                           | <sup>2</sup> <sub>9</sub> 3   | <sup>4</sup> <sub>8</sub>     | 1                         | <sup>2</sup> <sub>4</sub> 9 |

|                             |                             |                             |                               |                               |                               |                             |                               |                             |                               |
|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|
| 4                           | <sup>3</sup> <sub>8</sub>   | 7                           | 1                             | <sup>3</sup> <sub>5</sub> 6   | <sup>3</sup> <sub>4</sub> 5 6 | 9                           | <sup>2</sup> <sub>4</sub> 8   | <sup>2</sup> <sub>4</sub> 6 | <sup>2</sup> <sub>4</sub> 8   |
| 4                           | <sup>6</sup> <sub>8</sub>   | <sup>6</sup> <sub>8</sub> 9 | 5                             | <sup>6</sup> <sub>7</sub> 8   | 1                             | 2                           | <sup>4</sup> <sub>7</sub> 8 9 | 3                           | <sup>4</sup> <sub>7</sub> 8 9 |
| <sup>3</sup> <sub>4</sub> 6 | 2                           | <sup>3</sup> <sub>9</sub>   | <sup>3</sup> <sub>7</sub> 8   | <sup>3</sup> <sub>6</sub> 4   | <sup>3</sup> <sub>7</sub> 8   | <sup>3</sup> <sub>4</sub> 6 | 1                             | 5                           | <sup>4</sup> <sub>7</sub> 8 9 |
| <sup>4</sup> <sub>7</sub> 5 | <sup>3</sup> <sub>9</sub>   | <sup>3</sup> <sub>4</sub> 7 | <sup>3</sup> <sub>1</sub>     | <sup>6</sup> <sub>7</sub>     | 2                             | <sup>1</sup> <sub>6</sub>   | <sup>4</sup> <sub>7</sub> 5   | 8                           | <sup>4</sup> <sub>7</sub> 9   |
| <sup>2</sup> <sub>7</sub> 5 | 1                           | <sup>2</sup> <sub>7</sub> 9 | 4                             | <sup>5</sup> <sub>7</sub> 9   | 8                             | 6                           | <sup>2</sup> <sub>9</sub>     | 3                           |                               |
| <sup>2</sup> <sub>4</sub> 5 | <sup>6</sup> <sub>7</sub> 8 | <sup>6</sup> <sub>8</sub> 9 | 6                             | <sup>3</sup> <sub>7</sub> 5   | <sup>3</sup> <sub>9</sub> 7   | <sup>5</sup> <sub>7</sub>   | <sup>2</sup> <sub>4</sub> 5   | <sup>2</sup> <sub>4</sub> 9 | 1                             |
| <sup>2</sup> <sub>7</sub> 3 | 4                           | <sup>2</sup> <sub>6</sub>   | <sup>1</sup> <sub>7</sub> 8 9 | <sup>6</sup> <sub>7</sub> 8 9 | <sup>6</sup> <sub>7</sub>     | <sup>1</sup> <sub>6</sub>   | <sup>2</sup> <sub>8</sub> 3   | <sup>1</sup> <sub>2</sub> 6 | 5                             |
| 9                           | <sup>3</sup> <sub>5</sub> 6 | <sup>2</sup> <sub>7</sub>   | <sup>3</sup> <sub>7</sub> 8   | <sup>1</sup> <sub>5</sub> 6   | <sup>4</sup> <sub>7</sub> 8   | <sup>4</sup> <sub>5</sub> 6 | <sup>4</sup> <sub>8</sub>     | <sup>1</sup> <sub>2</sub> 6 | <sup>2</sup> <sub>4</sub> 6   |
| 1                           | <sup>5</sup> <sub>6</sub>   | 8                           | 2                             | <sup>4</sup> <sub>5</sub> 6   | 3                             | 4                           | <sup>9 7</sup>                | <sup>4</sup> <sub>6</sub> 9 |                               |

|                             |                               |                               |                             |                               |                             |                               |                             |                             |                             |
|-----------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>5</sup> <sub>7</sub> 9 | 1                             | <sup>4</sup> <sub>7</sub> 5   | <sup>3</sup> <sub>7</sub>   | <sup>4</sup> <sub>7</sub> 5 6 | <sup>4</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>7</sub> 5 6 | <sup>4</sup> <sub>7</sub>   | 8                           | 2                           |
| 6                           | <sup>4</sup> <sub>7</sub> 5   | 2                             | <sup>4</sup> <sub>7</sub> 9 | 3                             | 8                           | 1                             | <sup>5</sup> <sub>7</sub> 9 | <sup>5</sup> <sub>7</sub> 9 |                             |
| 8                           | <sup>4</sup> <sub>7</sub> 5   | <sup>3</sup> <sub>7</sub>     | <sup>3</sup> <sub>7</sub>   | <sup>4</sup> <sub>7</sub> 5   | 2                           | 1                             | <sup>4</sup> <sub>7</sub>   | <sup>5</sup> <sub>7</sub> 6 | <sup>5</sup> <sub>7</sub> 9 |
| 2                           | 8                             | 9                             | <sup>3</sup> <sub>6</sub>   | 5                             | <sup>3</sup> <sub>6</sub>   | 7                             | 4                           | 1                           |                             |
| 3                           | <sup>4</sup> <sub>7</sub>     | 1                             | 8                           | <sup>4</sup> <sub>7</sub>     | 2                           | 6                             | <sup>5</sup> <sub>9</sub>   | <sup>5</sup> <sub>9</sub>   |                             |
| <sup>5</sup> <sub>7</sub>   | <sup>4</sup> <sub>7</sub> 5 6 | <sup>4</sup> <sub>7</sub> 5 6 | 1                           | <sup>4</sup> <sub>7</sub> 9   | <sup>4</sup> <sub>7</sub> 9 | 2                             | 3                           | 8                           |                             |
| 4                           | <sup>3</sup> <sub>7</sub> 9   | 8                             | 2                           | 6                             | <sup>3</sup> <sub>7</sub> 9 | 5                             | 1                           | <sup>3</sup> <sub>7</sub>   |                             |
| 1                           | <sup>3</sup> <sub>7</sub> 5 6 | <sup>3</sup> <sub>7</sub> 5 6 | <sup>3</sup> <sub>7</sub> 5 | <sup>3</sup> <sub>7</sub> 8   | <sup>4</sup> <sub>7</sub> 5 | 9                             | 2                           | <sup>4</sup> <sub>7</sub> 6 |                             |
| <sup>5</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>7</sub> 5 6 | <sup>3</sup> <sub>7</sub> 5 6 | <sup>4</sup> <sub>7</sub> 5 | <sup>3</sup> <sub>7</sub> 1   | <sup>4</sup> <sub>7</sub> 5 | 8                             | <sup>6</sup> <sub>7</sub> 4 | <sup>3</sup> <sub>7</sub> 6 |                             |

|                             |                               |                             |                               |                             |                               |                               |                             |                             |                             |
|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>4</sub> 7 | <sup>3</sup> <sub>7</sub>     | 9                           | <sup>1</sup> <sub>7</sub> 3   | 2                           | <sup>1</sup> <sub>4</sub>     | <sup>1</sup> <sub>4</sub> 7   | 8                           | 6                           | 5                           |
| <sup>1</sup> <sub>4</sub> 7 | <sup>1</sup> <sub>4</sub> 6   | 8                           | <sup>1</sup> <sub>7</sub> 2   | 5                           | 3                             | <sup>1</sup> <sub>4</sub> 6   | <sup>2</sup> <sub>4</sub> 7 | <sup>2</sup> <sub>4</sub> 9 |                             |
| 5                           | <sup>2</sup> <sub>7</sub>     | <sup>2</sup> <sub>6</sub>   | <sup>2</sup> <sub>7</sub>     | <sup>6</sup> <sub>7</sub> 9 | <sup>4</sup> <sub>6</sub> 9   | 8                             | <sup>3</sup> <sub>7</sub>   | 1                           | <sup>2</sup> <sub>3</sub>   |
| <sup>1</sup> <sub>4</sub> 7 | <sup>1</sup> <sub>2</sub> 3   | 6                           | <sup>1</sup> <sub>7</sub> 2 3 | <sup>1</sup> <sub>3</sub> 8 | <sup>1</sup> <sub>7</sub> 2 3 | 5                             | 9                           | <sup>1</sup> <sub>4</sub> 7 | <sup>3</sup> <sub>6</sub>   |
| 8                           | <sup>1</sup> <sub>4</sub> 2 3 | 5                           | <sup>1</sup> <sub>7</sub> 6   | <sup>1</sup> <sub>3</sub> 9 | <sup>1</sup> <sub>2</sub> 6   | <sup>1</sup> <sub>7</sub> 2 3 | <sup>1</sup> <sub>4</sub> 7 | <sup>3</sup> <sub>6</sub>   | <sup>1</sup> <sub>4</sub> 6 |
| <sup>1</sup> <sub>9</sub> 3 | 7                             | <sup>1</sup> <sub>9</sub> 3 | 4                             | <sup>1</sup> <sub>6</sub>   | 5                             | 2                             | <sup>3</sup> <sub>8</sub>   | <sup>1</sup> <sub>3</sub> 6 |                             |
| <sup>7</sup> <sub>9</sub>   | <sup>1</sup> <sub>2</sub> 3   | 4                           | <sup>1</sup> <sub>3</sub>     | 5                           | <sup>1</sup> <sub>2</sub> 3   | 6                             | <sup>7</sup> <sub>8</sub>   | <sup>7</sup> <sub>8</sub> 9 |                             |
| <sup>1</sup> <sub>2</sub> 3 | <sup>6</sup> <sub>7</sub> 9   | 5                           | <sup>1</sup> <sub>7</sub> 9   | 8                           | <sup>1</sup> <sub>4</sub> 6   | <sup>1</sup> <sub>2</sub> 3   | <sup>1</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>3</sub> 1 | <sup>1</sup> <sub>2</sub> 3 |
| <sup>1</sup> <sub>2</sub> 3 | <sup>1</sup> <sub>2</sub> 3   | 8                           | <sup>1</sup> <sub>6</sub>     | 7                           | 9                             | <sup>1</sup> <sub>4</sub>     | 5                           | <sup>1</sup> <sub>4</sub>   | <sup>1</sup> <sub>2</sub> 3 |

|                             |                             |                             |                               |                             |                             |                             |                             |                             |  |
|-----------------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--|
| <sup>4</sup> <sub>7</sub> 6 | 9                           | 5                           | <sup>8</sup> <sub>6</sub>     | <sup>1</sup> <sub>8</sub> 3 | <sup>1</sup> <sub>8</sub> 3 | <sup>1</sup> <sub>4</sub> 6 | 7                           | <sup>1</sup> <sub>2</sub>   |  |
| <sup>7</sup> <sub>6</sub>   | <sup>2</sup> <sub>8</sub>   | <sup>2</sup> <sub>8</sub>   | <sup>7</sup> <sub>6</sub> 9   | <sup>1</sup> <sub>9</sub>   | 4                           | <sup>1</sup> <sub>6</sub> 9 | 3                           | 5                           |  |
| <sup>4</sup> <sub>7</sub> 6 | 3                           | 1                           | <sup>5</sup> <sub>7</sub> 8 9 | <sup>5</sup> <sub>8</sub> 9 | 2                           | <sup>4</sup> <sub>8</sub> 9 | <sup>4</sup> <sub>6</sub> 9 | <sup>6</sup> <sub>9</sub>   |  |
| 2                           | 4                           | 7                           | 1                             | 6                           | 8                           | <sup>5</sup> <sub>9</sub>   | <sup>5</sup> <sub>9</sub>   | <sup>3</sup> <sub>9</sub>   |  |
| <sup>5</sup> <sub>8</sub> 9 | <sup>3</sup> <sub>5</sub> 8 | <sup>3</sup> <sub>8</sub> 9 | <sup>5</sup> <sub>9</sub>     | 2                           | <sup>3</sup> <sub>7</sub> 5 | <sup>1</sup> <sub>6</sub>   | <sup>1</sup> <sub>6</sub>   | 4                           |  |
| <sup>3</sup> <sub>5</sub> 9 | <sup>3</sup> <sub>5</sub>   | 6                           | <sup>4</sup> <sub>5</sub> 9   | <sup>4</sup> <sub>5</sub> 9 | <sup>3</sup> <sub>7</sub> 9 | <sup>3</sup> <sub>7</sub>   | 2                           | 8                           |  |
| 1                           | <sup>2</sup> <sub>5</sub> 8 | <sup>2</sup> <sub>8</sub> 9 | <sup>4</sup> <sub>8</sub>     | 7                           | <sup>5</sup> <sub>6</sub> 9 | <sup>4</sup> <sub>5</sub> 6 | <sup>4</sup> <sub>5</sub> 6 | <sup>3</sup> <sub>6</sub> 9 |  |
| <sup>5</sup> <sub>8</sub> 9 | <sup>3</sup> <sub>6</sub> 8 | <sup>2</sup> <sub>8</sub> 9 | <sup>4</sup> <sub>8</sub>     | <sup>1</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>4</sub> 5 | <sup>1</sup> <sub>9</sub>   | 7                           |  |
| <sup>5</sup> <sub>9</sub>   | 7                           | 4                           | 3                             | <sup>1</sup> <sub>5</sub> 9 | <sup>1</sup> <sub>5</sub> 6 | <sup>1</sup> <sub>5</sub> 6 | 8                           | <sup>1</sup> <sub>2</sub>   |  |

|                               |                             |                             |                             |                             |                             |                             |                             |                             |                           |
|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------|
| <sup>1</sup> <sub>9</sub>     | <sup>1</sup> <sub>4</sub> 9 | 7                           | 2                           | 6                           | 5                           | 3                           | <sup>4</sup> <sub>9</sub>   | 8                           |                           |
| 8                             | <sup>4</sup> <sub>5</sub> 6 | 2                           | 3                           | 7                           | 9                           | <sup>4</sup> <sub>6</sub> 5 | <sup>4</sup> <sub>5</sub>   | 1                           |                           |
| <sup>5</sup> <sub>9</sub>     | <sup>5</sup> <sub>6</sub> 9 | <sup>5</sup> <sub>6</sub>   | 4                           | 8                           | 1                           | <sup>2</sup> <sub>7</sub> 9 | <sup>5</sup> <sub>7</sub> 9 | <sup>2</sup> <sub>5</sub> 6 |                           |
| <sup>1</sup> <sub>7</sub> 2 3 | <sup>1</sup> <sub>5</sub> 7 | <sup>5</sup> <sub>8</sub>   | <sup>3</sup> <sub>6</sub> 4 | <sup>3</sup> <sub>5</sub> 9 | <sup>2</sup> <sub>7</sub> 8 | <sup>4</sup> <sub>7</sub> 9 | <sup>3</sup> <sub>5</sub> 9 | <sup>4</sup> <sub>5</sub> 6 | <sup>3</sup> <sub>9</sub> |
| <sup>2</sup> <sub>7</sub> 3   | <sup>2</sup> <sub>5</sub> 6 | <sup>3</sup> <sub>5</sub> 6 | <sup>5</sup> <sub>9</sub>   | <sup>4</sup> <sub>5</sub> 9 | <sup>2</sup> <sub>7</sub>   | 1                           | 8                           | <sup>4</sup> <sub>5</sub> 6 | <sup>3</sup> <sub>9</sub> |
| 4                             | <sup>5</sup> <sub>7</sub> 6 | 9                           | <sup>5</sup> <sub>8</sub>   | 1                           | <sup>7</sup> <sub>8</sub>   | <sup>6</sup> <sub>7</sub>   | 2                           | <sup>3</sup> <sub>5</sub> 6 |                           |
| <sup>2</sup> <sub>5</sub> 9   | <sup>2</sup> <sub>5</sub> 8 | 1                           | 7                           | <sup>4</sup> <sub>5</sub> 9 | <sup>3</sup> <sub>8</sub>   | <sup>4</sup> <sub>8</sub> 9 | 6                           | <sup>2</sup> <sub>4</sub> 9 | <sup>2</sup> <sub>3</sub> |
| 6                             | <sup>7</sup> <sub>8</sub> 9 | <sup>4</sup> <sub>8</sub>   | <sup>1</sup> <sub>8</sub> 9 | 2                           | <sup>4</sup> <sub>8</sub>   | 5                           | <sup>1</sup> <sub>4</sub> 7 | <sup>3</sup> <sub>9</sub> 7 | <sup>3</sup> <sub>9</sub> |
| <sup>2</sup> <sub>7</sub> 5   | 3                           | <sup>4</sup> <sub>5</sub> 8 | <sup>1</sup> <sub>5</sub> 9 | <sup>4</sup> <sub>5</sub> 9 | 6                           | <sup>2</sup> <sub>4</sub> 8 | <sup>1</sup> <sub>4</sub> 9 | <sup>2</sup> <sub>4</sub> 9 |                           |

|               |             |               |               |          |                   |          |                   |               |             |        |
|---------------|-------------|---------------|---------------|----------|-------------------|----------|-------------------|---------------|-------------|--------|
| 1 2<br>4 6    | 2<br>4      | 5             | 2<br>6<br>9   | 8        | 2 3<br>6<br>9     | 1 2<br>4 | 1 4<br>7          | 1<br>6<br>4   | 1<br>4<br>7 | 3      |
| 1 2<br>4 8    | 2<br>6      | 7             | 5             | 2 3<br>6 | 2 3<br>6          | 9        | 1<br>4            | 6<br>8        | 1<br>6<br>4 | 3<br>8 |
| 2<br>8 9      | 3           | 2<br>6<br>8 9 | 7             | 4        | 1                 | 2<br>8   | 6<br>8            | 5             |             |        |
| 2<br>5<br>8 9 | 1           | 4             | 3             | 2<br>7 9 | 2<br>5<br>7 8 9   | 6        | 2<br>7 8 9        |               |             |        |
| 3             | 6           | 2<br>8 9      | 2<br>8 9      | 2<br>7 9 | 2<br>4<br>7 8 9   | 5        | 1 2<br>4<br>7 8 9 | 1<br>4        |             |        |
| 2<br>5<br>8 9 | 7           | 2<br>8 9      | 2<br>6<br>8 9 | 1        | 2<br>4 5 6<br>8 9 | 3        | 2<br>4            | 4<br>8 9      |             |        |
| 4<br>8        | 5           | 1<br>8        | 1<br>6<br>8 9 | 7<br>9   | 6<br>7 8 9        | 4<br>8   | 3                 | 2             |             |        |
| 4<br>8        | 2<br>6<br>4 | 3             | 1 2<br>6<br>8 | 5        | 2<br>6<br>8       | 7        | 1<br>4<br>8 9     | 1<br>4<br>8 9 |             |        |
| 7             | 9           | 1 2<br>8      | 4             | 2 3      | 2 3<br>8          | 1<br>8   | 5                 | 6             |             |        |

|             |               |               |             |               |                 |              |             |          |        |  |
|-------------|---------------|---------------|-------------|---------------|-----------------|--------------|-------------|----------|--------|--|
| 2 3<br>7    | 3<br>6        | 4             | 1           | 2 3<br>5 6    | 2<br>5 6        | 8            | 3<br>6<br>9 | 2 3<br>9 |        |  |
| 9           | 1<br>8        | 2 3<br>6      | 2           | 2 3<br>4 6    | 2<br>7 8        | 2 3<br>6     | 1<br>6      | 3<br>6   | 5      |  |
| 5           | 1<br>8        | 2 3<br>6      | 9           | 2 3<br>6      | 2<br>7 8        | 2 3<br>6     | 1<br>6      | 3<br>6   | 4      |  |
| 1<br>4<br>7 | 2             | 5 6           | 3           | 5 6<br>7      | 1<br>5 6        | 4 5 6        | 8 9         | 8 9      |        |  |
| 3<br>6      | 3<br>5 6<br>9 | 3<br>5 6<br>9 | 4           | 2<br>5 6<br>8 | 2<br>5 6<br>8   | 2<br>5 6     | 7           | 1        |        |  |
| 1<br>4<br>7 | 4<br>7        | 8             | 2<br>5<br>7 | 9             | 1 2<br>5 6<br>7 | 2 3<br>4 5 6 | 3<br>4 5 6  | 2 3      |        |  |
| 2<br>4<br>8 | 4 5<br>9      | 2<br>5<br>9   | 6           | 1             | 3               | 4 5          | 4 5<br>8    | 7        |        |  |
| 4<br>8      | 3<br>4 5      | 3             | 7           | 8             | 4 5             | 9            | 1           | 2        | 6      |  |
| 4<br>8      | 6 4 5 6       | 1             | 2<br>5<br>7 | 2<br>4 5<br>7 | 2<br>4 5<br>7   | 9            | 4 5<br>8    | 3<br>8   | 3<br>8 |  |

|             |          |            |          |          |                 |            |                 |        |  |  |
|-------------|----------|------------|----------|----------|-----------------|------------|-----------------|--------|--|--|
| 1           | 6        | 2          | 3<br>7   | 3<br>7   | 8               | 4          | 9               | 5      |  |  |
| 8           | 7        | 5          | 4        | 9        | 1<br>6          | 1 2 3<br>6 | 1 2<br>6        | 1<br>3 |  |  |
| 9           | 4        | 3          | 2        | 5        | 1<br>6          | 1<br>8     |                 | 7      |  |  |
| 2 3<br>5    | 2 3<br>9 | 4          | 1        | 3<br>7 8 | 3<br>9          | 2 3<br>7 8 | 6<br>8 9        |        |  |  |
| 5 6<br>7    | 3<br>9   | 6<br>7 8 9 | 3<br>4 6 | 2        | 1 3<br>5<br>7 8 | 1 4<br>7 8 | 1 3<br>4<br>8 9 |        |  |  |
| 2 3<br>6    | 1        | 8          | 3<br>4 6 | 5        | 2 3<br>7        | 2<br>4     | 3<br>4 9        |        |  |  |
| 2<br>6<br>7 | 2<br>8 9 | 7<br>9     | 5        | 1 2<br>4 | 1<br>9          | 3<br>7 8   | 1<br>4<br>8     |        |  |  |
| 2 3<br>7    | 5        | 7 9        | 3<br>8 9 | 1 2<br>4 | 3<br>9          | 1<br>7 8   | 1 4<br>7 8      | 6      |  |  |
| 4           | 3<br>8   | 1          | 6        | 3<br>8   | 7               | 9          | 5               | 2      |  |  |

|          |             |          |              |              |            |              |              |                 |  |  |
|----------|-------------|----------|--------------|--------------|------------|--------------|--------------|-----------------|--|--|
| 9        | 2           | 4 6      | 8            | 1 3<br>4 6   | 7          | 1 3<br>6     | 5            | 1 3<br>6        |  |  |
| 3<br>6   | 3<br>8      | 7        | 1<br>5       | 1<br>5 6     | 2          | 1<br>6       | 4            | 9               |  |  |
| 1        | 5           | 4 6<br>8 | 4            | 3<br>4 6     | 3<br>4 6   | 2 3<br>6     | 2 3<br>7 8   | 3<br>6          |  |  |
| 5 6<br>7 | 1 4<br>6    | 9        | 1 2 3<br>4 5 | 1 3<br>4 5 6 | 4 5 6<br>8 | 1 2 3<br>4 5 | 1 2 3<br>7 8 | 1 3<br>4<br>7 8 |  |  |
| 8        | 1<br>4<br>7 | 2        | 9            | 1 3<br>4 5   | 4 5        | 1 3<br>4 5   | 6            | 1 3<br>4<br>7   |  |  |
| 5 6      | 1<br>4      | 6        | 3            | 1 2<br>4 5   | 7          | 1 2<br>4 5 6 | 1 2<br>8 9   | 1<br>4<br>8     |  |  |
| 3<br>7   | 3<br>7      | 1<br>5   | 6            | 8            | 4 5<br>9   | 1<br>4       | 1<br>9       | 2               |  |  |
| 4        | 9           | 6<br>8   | 7            | 2            | 1          | 3<br>6       | 8            | 5               |  |  |
| 2        | 6<br>8      | 1<br>5   | 4 5          | 4 5<br>9     | 3          | 7            | 1<br>8 9     | 1 4<br>6<br>8   |  |  |

|            |            |            |             |              |             |          |            |          |  |  |
|------------|------------|------------|-------------|--------------|-------------|----------|------------|----------|--|--|
| 1 2 3<br>7 | 9          | 1 2 3<br>7 | 2<br>6      | 3<br>6       | 5           | 4        | 2 3<br>8   |          |  |  |
| 2 3<br>5 6 | 2 3<br>5 6 | 2 3<br>7   | 2<br>6<br>9 | 4            | 5<br>7 8 9  | 1        | 2 3<br>9   |          |  |  |
| 2 3<br>5   | 2 3<br>5   | 4          | 1           | 3<br>9 7 8 9 | 5<br>7      | 6        | 2 3<br>9   |          |  |  |
| 1 2<br>7   | 1 2<br>5   | 1 2<br>7 9 | 3           | 8            | 4           | 6        | 1 2<br>7 9 |          |  |  |
| 3<br>7 9   | 3<br>7     | 6          | 5           | 1            | 2           | 8        | 7 9        | 4        |  |  |
| 1 2        | 4          | 8          | 7<br>9      | 6<br>9       | 6<br>7 9    | 1 3<br>9 | 2 3        | 5        |  |  |
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|               |        |               |                 |               |                 |          |                 |     |   |   |
|---------------|--------|---------------|-----------------|---------------|-----------------|----------|-----------------|-----|---|---|
| 2 3<br>5<br>8 | 6      | 2<br>4 5<br>8 | 1 2 3<br>4<br>8 | 2<br>4<br>8   | 1 2 3<br>4<br>8 | 1 2<br>5 | 1 2 3<br>4<br>9 | 7   |   |   |
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|                 |                 |              |                 |                 |                   |               |               |
|-----------------|-----------------|--------------|-----------------|-----------------|-------------------|---------------|---------------|
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|               |                 |                 |               |                |              |            |          |
|---------------|-----------------|-----------------|---------------|----------------|--------------|------------|----------|
| 4 5<br>7      | 3 4<br>5 8      | 9<br>7 8        | 1 5 6<br>7    | 1 4 5 6<br>7   | 4 5 6<br>7 8 | 2 3<br>7 8 | 2 4<br>5 |
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|                   |                 |              |              |              |              |              |            |
|-------------------|-----------------|--------------|--------------|--------------|--------------|--------------|------------|
| 1 2<br>9          | 1 2<br>5<br>8 9 | 1<br>8 9     | 3 4<br>8 9   | 7<br>2       | 6 1 2<br>5 4 | 1 2<br>4 9   |            |
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|                 |                 |                 |              |              |            |            |            |
|-----------------|-----------------|-----------------|--------------|--------------|------------|------------|------------|
| 2 3<br>4 8 9    | 2 3<br>4 9      | 2 3<br>8 9      | 2 4 5<br>7 8 | 4 5<br>8     | 4 7 8      | 1 7 8<br>2 | 6 6<br>9   |
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| 1 2<br>4 8      | 1 2<br>4 6      | 7 4             | 1 2<br>4 8   | 3 4<br>8     | 6 4<br>8   | 5 4<br>9   | 5 4<br>9   |
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| 4 3<br>9        | 8<br>9          | 3 6<br>9        | 6 4<br>9     | 5<br>9       | 7 2<br>1   | 7 2<br>1   | 7 2<br>1   |



|           |     |         |         |           |     |         |           |       |
|-----------|-----|---------|---------|-----------|-----|---------|-----------|-------|
| 6         | 1   | 4 5     | 8       | 4 5       | 2   | 3       | 3         | 9     |
| 2 5       | 7   | 2 5 9   | 3       | 5 9       | 6   | 1 4     | 1 4 8     | 1 4 8 |
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|       |               |               |             |             |         |           |           |         |
|-------|---------------|---------------|-------------|-------------|---------|-----------|-----------|---------|
| 5     | 3             | 4 2           | 4 2         |             | 8       | 4 6 9     | 1         | 6 9     |
| 2 6   | 1 2 6 8       | 1 2 4 8       | 1 2 3 4 9   | 1 3 4 7 9   | 2 3 4 7 | 5         | 4 7       | 3 7 9   |
| 1 4   | 7             | 9             | 1 4 5       | 1 3 5       | 6       | 4 3       | 8         | 2       |
| 1 4   | 1 4 5 8       | 1 4 5 8 3     | 7           | 6 8         | 9       | 1 2 3 4 6 | 2 3 4 5 6 | 1 3 5 6 |
| 2 7   | 4 2           | 6             | 1 4         | 3 1 3       | 5       | 8         | 9         | 3 7     |
|       | 1 4 5 8 9     | 1 4 5 8 3 7   |             | 6 2 4 3     | 1 3 4 6 | 3 4 5 6 7 | 1 3 5 6 7 | 3       |
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| 8     | 1 2 5 6 9     | 1 2 5         | 2 3 5 6 9   | 4 2 3       | 7       | 2 3 5 6   | 1 3 5 6 9 | 3       |

|         |             |           |             |           |             |             |           |   |
|---------|-------------|-----------|-------------|-----------|-------------|-------------|-----------|---|
| 7       | 1 2 3 6     | 1 2 3 9   | 3 1 6 4 8 9 | 1 3 4 6 9 | 1 2 6 9     | 5           | 1 2 9     |   |
| 8       | 1 3 6       | 1 3 9     | 3 6         | 5 2       | 1 4 6 7 9   | 1 4 6 4     | 1 4 6 4   | 9 |
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| 1 5     | 8           | 1 2 4 5 7 | 2 5 6 7     | 3 4 5 6 7 | 1 2 4 5 6   | 9           | 1 2 4 5   |   |
| 2       | 1 3 5 6 9   | 7         | 4           | 1 6 5 6   | 1 5 8 9     | 1 3 1 5 8 9 | 3         |   |
| 1 3 5 6 | 1 3 5 6     | 1 5 3     | 9           | 1 2 6     | 8           | 1 2 4 7     | 1 2 3 4 5 |   |
| 4       | 1 3 5 9     | 8         | 2 3 5       | 7 1 5 3   | 1 2 5 9     | 1 2 3       | 6         |   |

|         |     |     |   |   |     |       |       |   |
|---------|-----|-----|---|---|-----|-------|-------|---|
| 4       | 3   | 9   | 6 | 5 | 2 8 | 2 7 8 | 2 7   | 1 |
| 5 6 7   | 5 7 | 6   | 1 | 4 | 2 8 | 3     | 9     |   |
| 2       | 8   | 1   | 3 | 9 | 7   | 4     | 6     | 5 |
|         | 6 7 | 5   | 9 | 8 | 1 6 | 3     | 4     | 2 |
| 3 1 6 9 |     | 3 6 | 4 | 2 | 1 6 | 5     | 8     | 7 |
| 8       | 4   | 2   | 7 | 3 | 5   | 1 9   | 1 9   | 6 |
| 1       | 5 9 | 8   | 2 | 7 | 4   | 6     | 5 9   | 3 |
| 5 3 7   | 6 7 | 3   | 8 | 1 | 9   | 2 7   | 2 5 7 | 4 |
|         | 2 4 | 5   | 6 | 3 | 1 9 | 1 9   | 8     |   |

|         |           |         |           |           |           |         |           |   |
|---------|-----------|---------|-----------|-----------|-----------|---------|-----------|---|
| 1       | 4         | 2 9     | 3         | 2 6 9     | 8         | 7       | 5 6 5 6 9 |   |
| 8       | 5 7 9     | 2 3 7 9 | 2 5 6 9 7 | 2 6 4 9 7 | 4 6 4 6 9 | 1       | 2 3 4 6 9 |   |
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| 3       | 2         | 4       | 8         | 1         | 5         | 6       | 9         | 7 |
| 5 6 7 9 | 5 7 9 8 9 |         | 2 6 4 9   | 2 3 6 4 9 | 4 5 3     | 1       | 4 5 8 3   |   |
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| 2       | 7 8 9     | 5       | 6 9 7 8 9 | 6 3 7 8 9 | 3         | 1       | 4 6 4 6 9 |   |
| 7 9     | 3 7 8 9   | 1       | 4         | 5 6 7 8 9 | 2         | 5 3 9 7 | 3 5 6 9   |   |

|           |                 |             |             |             |             |                 |             |   |
|-----------|-----------------|-------------|-------------|-------------|-------------|-----------------|-------------|---|
| 1         | 2 7             | 2 7         | 5 3 4 6 5 6 | 3 5 6       | 8           | 9               | 4 3 6       |   |
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| 2 5 6 8   | 1 2 5 6         | 2 6 8       | 4           | 2 3 1 2 3 5 | 9           | 7               | 2 6 8       |   |
| 4 5 8     | 9               | 4 8         | 6           | 2 7         | 1 5         | 3               | 1 2 4 8     |   |

|            |            |          |            |            |                |            |            |   |            |          |          |            |
|------------|------------|----------|------------|------------|----------------|------------|------------|---|------------|----------|----------|------------|
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| 1 2 3<br>9 | 1 2<br>9   |          | 6          |            | 1<br>7 8 9     | 1<br>7 8 9 | 3<br>7 8 9 | 5 | 1 2<br>8   | 2 3<br>8 | 4        |            |
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| 1<br>4     |            | 1<br>4   | 5<br>7     | 1<br>7     | 4<br>7 9       | 5<br>7 9   |            | 6 | 2<br>4     | 3<br>9   |          | 8          |
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|        |            |          |          |          |            |              |                |            |          |            |          |
|--------|------------|----------|----------|----------|------------|--------------|----------------|------------|----------|------------|----------|
| 4<br>7 |            | 5        | 8        | 9        | 4<br>7     | 6<br>7       | 2<br>6         | 2<br>6     | 1        | 3          |          |
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| 6      | 1          |          | 2<br>7 9 |          | 2<br>5 8   | 3<br>7 8     | 2 3<br>5 7 8   | 2<br>7 8 9 | 4        |            | 7 9      |
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|              |            |            |          |          |            |              |          |              |            |            |   |
|--------------|------------|------------|----------|----------|------------|--------------|----------|--------------|------------|------------|---|
| 1<br>4       | 1<br>4     |            | 4<br>9   | 2        | 5<br>8 9   | 3<br>5 8 9   | 1<br>3   | 7            | 1<br>4     | 3<br>8     | 6 |
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| 1 2<br>7 8   | 1 2<br>7 8 |            | 6<br>7   |          | 3<br>8 9   | 4<br>8 9     | 3<br>6   | 5            | 1 2 3<br>7 | 1 2<br>7 9 |   |
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| 2 3<br>4 5 6 | 2<br>4 5 6 |            | 8        |          | 3<br>7 9   | 1<br>5 6 9   | 3        | 2<br>9 7     | 2          | 2          |   |

|        |               |          |            |                 |            |               |              |                 |
|--------|---------------|----------|------------|-----------------|------------|---------------|--------------|-----------------|
| 7      | 4             | 8        | 1 2        | 3               | 5          | 1 2           | 6            | 9               |
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| 1      | 3<br>6<br>8 9 | 2        | 5          | 4 6<br>7 8 9    | 4<br>7 8 9 | 3<br>4 6 9    | 3<br>9       | 3<br>6<br>8     |
| 5      | 3<br>6<br>8 9 | 3<br>6   | 4 6<br>8   | 4 6<br>8 9      | 2          | 7             | 4<br>9       | 3<br>1          |
| 4      | 3<br>6<br>8 9 | 7        | 1<br>8     | 1<br>6<br>8 9   | 1 3<br>8 9 | 2<br>5 6<br>9 | 2 3<br>5 9   | 2 3<br>5 6<br>8 |

|          |            |          |        |              |              |            |          |                |            |        |  |
|----------|------------|----------|--------|--------------|--------------|------------|----------|----------------|------------|--------|--|
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| 4        | 1<br>8     |          | 9      | 5            | 1<br>8 6     | 3<br>6 8   | 7        |                | 3<br>8     | 2      |  |
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| 7        | 2<br>8     |          | 5      | 4            |              | 3<br>9 8   |          | 3<br>9         | 1          | 6      |  |

|            |          |          |                |          |            |          |          |              |              |              |
|------------|----------|----------|----------------|----------|------------|----------|----------|--------------|--------------|--------------|
| 4<br>9     |          | 3        | 6              | 8        | 5          | 2        | 1        | 7            | 4<br>9       |              |
| 7          | 1<br>4   |          | 1<br>9 8 9     | 3        | 6          | 1<br>9   | 2        | 4 5<br>8 9   | 4 5<br>8 9   |              |
| 1          |          | 2        | 5              | 1<br>7   |            | 4        |          | 6            | 3            |              |
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| 2          | 8        | 4        |                | 5 6      | 1          | 3        |          | 5 6<br>9     | 5<br>9       | 7            |
| 1<br>5     | 3<br>7   | 1<br>5 6 |                | 1<br>7   | 3<br>7     |          | 9        | 4<br>8       | 2<br>8       | 1 2<br>4 5 8 |
| 4 5<br>8 9 | 4 5<br>9 |          | 2 3<br>8 9     | 7        |            | 3<br>7 9 | 6        | 4 5<br>7 8 9 | 1<br>4 5 8 9 | 2<br>2       |
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| 5<br>9     | 1<br>7   | 5<br>9   | 1 2<br>7 9     |          | 4<br>8     | 1<br>9   | 3        | 2<br>5 9     |              | 6            |

|          |        |          |          |        |        |          |          |          |          |
|----------|--------|----------|----------|--------|--------|----------|----------|----------|----------|
| 2<br>7   | 1<br>7 | 6<br>6   | 2 3<br>6 | 9      | 6<br>8 | 1<br>5   | 4<br>7   | 3<br>5   | 4<br>7 8 |
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|          |          |            |            |        |            |          |          |          |                |
|----------|----------|------------|------------|--------|------------|----------|----------|----------|----------------|
| 2<br>7   | 2<br>7   | 6<br>9     | 5 6<br>7 8 | 6<br>7 | 4 5<br>7 9 | 3        | 1        | 4<br>6   | 4 5 6<br>4 5 6 |
| 1<br>9   | 1<br>9   | 6<br>9     | 5 6<br>8   | 2      | 4 5<br>9   | 6<br>8 9 | 7        | 3<br>4 6 | 3<br>4 5 6     |
| 4        | 3        | 5 6<br>7 8 | 1          | 5<br>7 | 6<br>8     | 9        | 2        | 5 6<br>8 |                |
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| 1 2<br>7 | 1 2<br>7 | 1<br>6     | 9          | 3      | 5          | 4        | 8        | 7<br>6   |                |

|          |          |        |        |          |            |          |        |        |  |
|----------|----------|--------|--------|----------|------------|----------|--------|--------|--|
| 2 3<br>4 | 4<br>9   | 3<br>4 | 5<br>8 | 7        | 2 3<br>5 8 | 1        | 6      |        |  |
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|          |            |            |            |              |            |          |              |          |          |
|----------|------------|------------|------------|--------------|------------|----------|--------------|----------|----------|
| 4<br>7   | 4<br>7 8 9 | 5<br>8 9   | 3<br>4     | 2 3<br>9     | 2 3<br>7 9 | 1        | 6            | 2<br>4 5 | 2<br>4 5 |
| 1<br>6   | 4<br>7 9   | 6<br>9     | 1<br>3     | 2 3<br>4     | 2 3<br>6 9 | 5        | 1 2<br>7     | 1 2<br>4 | 8        |
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| 3<br>8 9 | 2<br>5     | 7          | 2 3<br>4 5 | 1 2 3<br>8 9 | 4<br>8 9   | 1 2<br>5 | 6            | 1 2      |          |

|          |              |              |              |            |        |          |              |            |        |
|----------|--------------|--------------|--------------|------------|--------|----------|--------------|------------|--------|
| 1<br>5 6 | 9            | 1<br>5 6     | 1 2<br>8     | 1 2<br>5 8 | 2<br>6 | 7        | 1<br>4 5     | 3<br>4     | 1<br>8 |
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|            |          |        |            |            |            |            |          |        |  |
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| 1<br>5     | 3        | 2      | 5 6<br>7 9 | 8          | 5 6<br>7 9 | 5<br>7 9   | 1<br>7 9 | 4      |  |
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| 1<br>4 5 6 | 1<br>4 5 | 8      | 1<br>4 5 6 | 1<br>4 5   | 5 6<br>7 9 | 4<br>6 9   | 2        | 3      |  |
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|                    |                    |                  |                  |                |                |                  |                    |                    |
|--------------------|--------------------|------------------|------------------|----------------|----------------|------------------|--------------------|--------------------|
| 9                  | 4                  | <sup>1</sup> 5   | <sup>3</sup> 5   | <sup>6</sup> 8 | <sup>6</sup> 8 | <sup>2 3</sup> 5 | 7                  | <sup>1 2 3</sup> 1 |
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| 5                  | <sup>1 2</sup> 8   | 9                | <sup>1 2</sup> 7 | <sup>4</sup> 7 | 3              | 8                | 6                  | <sup>4</sup> 7     |
| <sup>1 2</sup> 4   | <sup>1 2</sup> 8   | 3                | 6                | <sup>1</sup> 4 | <sup>2</sup> 5 | <sup>2</sup> 4   | <sup>1 2</sup> 4   | <sup>1 2</sup> 7   |
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| 7                  | <sup>1 2 3</sup> 5 | <sup>1</sup> 5   | 9                | <sup>1</sup> 5 | <sup>3</sup> 6 | <sup>2 3</sup> 5 | <sup>2 3</sup> 5   | 8                  |
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|                  |                  |                |                  |                |                  |                  |                |                  |
|------------------|------------------|----------------|------------------|----------------|------------------|------------------|----------------|------------------|
| 7                | <sup>3</sup> 5   | 8              | 4                | <sup>1</sup> 3 | <sup>2 3</sup> 5 | <sup>1</sup> 6   | 9              | <sup>1 2</sup> 6 |
| 4                | <sup>3</sup> 6   | 1              | <sup>3</sup> 8   | <sup>3</sup> 9 | <sup>2 3</sup> 8 | <sup>1</sup> 7   | 5              | <sup>2</sup> 6   |
| <sup>2</sup> 9   | <sup>5 6</sup> 8 | <sup>2</sup> 9 | <sup>5</sup> 8   | <sup>1</sup> 6 | 7                | 4                | 3              | <sup>1</sup> 6   |
| <sup>1</sup> 3   | 2                | <sup>6</sup> 7 | <sup>1</sup> 5   | 5              | 4                | <sup>1</sup> 6   | 8              | <sup>1</sup> 3   |
| <sup>5 6</sup> 8 | <sup>1</sup> 4   | <sup>1</sup> 3 | <sup>1</sup> 8   | <sup>3</sup> 9 | <sup>2</sup> 7   | <sup>5 6</sup> 8 | <sup>1</sup> 5 | <sup>3</sup> 6   |
| <sup>1</sup> 5   | <sup>3</sup> 7   | <sup>1</sup> 8 | <sup>2</sup> 5   | <sup>1</sup> 7 | 2                | 6                | <sup>1</sup> 5 | <sup>3</sup> 4   |
| 8                | 9                | 3              | 6                | 4              | 1                | <sup>5</sup> 7   | 2              | <sup>5</sup> 7   |
| <sup>1 2</sup> 5 | <sup>1</sup> 7   | <sup>2</sup> 5 | <sup>3</sup> 9   | <sup>3</sup> 7 | <sup>3</sup> 5   | <sup>1</sup> 8   | <sup>1</sup> 6 | 4                |
| <sup>1</sup> 5   | 6                | 4              | <sup>5 6</sup> 7 | 2              | <sup>7 8</sup> 5 | 3                | <sup>1</sup> 6 | 9                |

|                    |                  |                    |                  |                    |                  |                |                    |                    |
|--------------------|------------------|--------------------|------------------|--------------------|------------------|----------------|--------------------|--------------------|
| <sup>5</sup> 7     | 3                | <sup>1</sup> 9     | <sup>1 2</sup> 7 | <sup>1 2</sup> 8   | <sup>1 2</sup> 7 | <sup>5</sup> 9 | 6                  | 4                  |
| <sup>6</sup> 7     | <sup>1</sup> 6   | <sup>1</sup> 8     | 5                | 4                  | <sup>1 3</sup> 7 | 2              | <sup>1 3</sup> 9   | <sup>1 3</sup> 9   |
| 2                  | <sup>1</sup> 5   | 4                  | 6                | 9                  | <sup>1 3</sup> 5 | <sup>3</sup> 8 | <sup>1 3</sup> 8   | 7                  |
| <sup>4 5 6</sup> 7 | <sup>5 6</sup> 8 | <sup>2 3</sup> 9   | <sup>4</sup> 7   | <sup>2 3</sup> 9   | <sup>2</sup> 7   | 1              | <sup>2 3</sup> 5   | <sup>2 3</sup> 6   |
| <sup>5 6</sup> 7   | <sup>1</sup> 5   | <sup>1 2 3</sup> 9 | <sup>1 2</sup> 7 | <sup>1 2 3</sup> 9 | <sup>1 2</sup> 8 | <sup>3</sup> 5 | 4                  | <sup>2 3</sup> 6   |
| <sup>4</sup> 8     | <sup>1</sup> 9   | <sup>1 2 3</sup> 8 | <sup>1 2</sup> 4 | <sup>5 6</sup> 9   | <sup>3</sup> 8   | <sup>3</sup> 7 | <sup>2 3</sup> 9   | <sup>2 3</sup> 9   |
| <sup>1</sup> 9     | 2                | 6                  | 3                | 7                  | 5                | 4              | <sup>1</sup> 9     | 8                  |
| <sup>1 3</sup> 9   | 4                | 5                  | <sup>1 2</sup> 8 | <sup>1 2</sup> 8   | <sup>1 2</sup> 9 | 7              | <sup>1 2 3</sup> 9 | <sup>1 2 3</sup> 6 |
| <sup>1 3</sup> 9   | 8                | 7                  | <sup>1 2</sup> 9 | <sup>1 2</sup> 6   | <sup>4</sup> 5   | <sup>3</sup> 5 | <sup>1 2 3</sup> 5 | <sup>1 2 3</sup> 6 |

|                  |                |                  |                  |                    |                    |                    |                  |                    |
|------------------|----------------|------------------|------------------|--------------------|--------------------|--------------------|------------------|--------------------|
| <sup>1</sup> 7   | <sup>3</sup> 2 | 6                | 4                | <sup>7 8</sup> 6   | <sup>1</sup> 8     | <sup>1</sup> 5     | <sup>1</sup> 8   | <sup>1 3</sup> 5   |
| 8                | 5              | <sup>1 3</sup> 4 | <sup>2 3</sup> 7 | <sup>2</sup> 6     | <sup>1 3</sup> 9   | <sup>1 2</sup> 4   | <sup>1 2</sup> 6 | <sup>1 2 3</sup> 9 |
| <sup>1 3</sup> 4 | <sup>3</sup> 4 | 9                | 5                | <sup>2</sup> 8     | <sup>1 3</sup> 8   | <sup>1 2</sup> 4   | 7                | <sup>1 2 3</sup> 9 |
| <sup>1</sup> 4   | <sup>5</sup> 9 | <sup>4</sup> 8   | 2                | <sup>7 8 9</sup> 3 | 6                  | <sup>1</sup> 4     | <sup>1</sup> 9   | <sup>1</sup> 5     |
| <sup>1</sup> 5   | <sup>3</sup> 9 | <sup>3</sup> 8   | <sup>1</sup> 5   | <sup>2</sup> 7     | <sup>1 2</sup> 8   | <sup>1 2 3</sup> 7 | <sup>1 2</sup> 9 | 6                  |
| 6                | 7              | <sup>1 3</sup> 4 | <sup>2</sup> 9   | <sup>1 2</sup> 5   | <sup>1 2 3</sup> 4 | <sup>1 2</sup> 9   | <sup>1 2</sup> 4 | 8                  |
| <sup>2 3</sup> 7 | 1              | <sup>3</sup> 7   | <sup>3</sup> 8   | <sup>5</sup> 8     | <sup>3</sup> 8     | <sup>2</sup> 7     | <sup>2</sup> 8   | 4                  |
| <sup>4</sup> 7   | <sup>3</sup> 4 | <sup>3</sup> 6   | <sup>1</sup> 8   | <sup>3</sup> 7     | <sup>1</sup> 9     | <sup>1</sup> 7     | <sup>1</sup> 5   | <sup>1</sup> 9     |
| <sup>2</sup> 5   | <sup>6</sup> 8 | <sup>5</sup> 8   | <sup>1</sup> 6   | 4                  | 7                  | <sup>1 2</sup> 6   | <sup>1 2</sup> 3 | <sup>1 2</sup> 9   |

|                    |                  |                    |                    |                  |                    |                  |                    |                  |
|--------------------|------------------|--------------------|--------------------|------------------|--------------------|------------------|--------------------|------------------|
| <sup>4</sup> 8     | <sup>3</sup> 7   | <sup>4</sup> 6     | 5                  | <sup>3</sup> 7   | 1                  | <sup>3</sup> 8   | <sup>6</sup> 8     | 2                |
| <sup>5 6</sup> 8   | <sup>3</sup> 7   | <sup>5 6</sup> 8   | <sup>3</sup> 6     | <sup>3</sup> 7   | 2                  | <sup>3</sup> 6   | <sup>5 6</sup> 8   | 1                |
| 2                  | <sup>5 6</sup> 8 | 1                  | <sup>4</sup> 8     | <sup>3</sup> 4   | <sup>3</sup> 4     | <sup>3</sup> 5   | <sup>5 6</sup> 8   | 7                |
| 9                  | 8                | <sup>3</sup> 7     | <sup>4</sup> 7     | <sup>3</sup> 1   | <sup>4 5</sup> 7   | <sup>2</sup> 7   | <sup>2</sup> 5     | <sup>4 5</sup> 6 |
| <sup>5</sup> 3     | 4                | 2                  | <sup>7 8</sup> 6   | <sup>3</sup> 7   | <sup>5</sup> 8     | <sup>1</sup> 7   | 1                  | 9                |
| 1                  | <sup>5 6</sup> 7 | <sup>5 6</sup> 7   | 9                  | <sup>4 5</sup> 7 | 2                  | <sup>5 6</sup> 7 | <sup>4 5 6</sup> 8 | 3                |
| <sup>4 5 6</sup> 8 | 1                | <sup>4 5 6</sup> 8 | <sup>4</sup> 7     | <sup>2</sup> 9   | <sup>4 5 6</sup> 7 | <sup>5</sup> 7   | <sup>3</sup> 4     | <sup>5 8</sup> 6 |
| 7                  | 9                | <sup>4 5</sup> 3   | <sup>1 2 3</sup> 4 | <sup>3</sup> 8   | <sup>4 5</sup> 3   | <sup>1 2</sup> 5 | <sup>2</sup> 4     | 6                |
| <sup>4 5 6</sup> 8 | 2                | <sup>4 5 6</sup> 8 | <sup>1</sup> 7     | <sup>3</sup> 6   | <sup>4 5</sup> 7   | <sup>3</sup> 5   | <sup>4 5</sup> 9   | <sup>4 5</sup> 8 |

|                |                    |                    |                  |                  |                  |                  |                  |                  |
|----------------|--------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <sup>1</sup> 9 | <sup>2</sup> 4     | <sup>1 2</sup> 4   | 3                | 6                | <sup>1 2</sup> 4 | <sup>1</sup> 4   | <sup>1</sup> 4   | 5                |
| 8              | <sup>3</sup> 6     | <sup>3</sup> 6     | 5                | <sup>4</sup> 7   | <sup>1</sup> 7   | <sup>2</sup> 4   | <sup>1</sup> 7   | <sup>1</sup> 9   |
| <sup>1</sup> 5 | <sup>2</sup> 4     | <sup>1 2</sup> 4   | 8                | <sup>2</sup> 4   | <sup>1 2</sup> 4 | <sup>1</sup> 4   | <sup>1</sup> 7   | 6                |
| 4              | 1                  | <sup>2</sup> 5     | <sup>2</sup> 6   | <sup>2</sup> 5   | <sup>2</sup> 5   | 7                | 9                | 3                |
| <sup>3</sup> 5 | <sup>2 3</sup> 5   | <sup>2 3</sup> 8   | 7                | <sup>1</sup> 5   | <sup>2</sup> 6   | <sup>5 6</sup> 8 | <sup>2</sup> 5   | 4                |
| 7              | <sup>2</sup> 5     | <sup>2</sup> 5     | 4                | 3                | <sup>2</sup> 5   | <sup>1</sup> 5   | <sup>1 2</sup> 5 | 8                |
| 2              | <sup>4 5 6</sup> 8 | <sup>4 5 6</sup> 8 | <sup>1</sup> 6   | <sup>4 5</sup> 9 | 3                | <sup>4 5</sup> 8 | <sup>4 5</sup> 8 | 7                |
| <sup>1</sup> 5 | <sup>4 5</sup> 3   | <sup>3</sup> 7     | <sup>1 2</sup> 9 | 8                | <sup>2</sup> 4   | <sup>1</sup> 4   | <sup>1</sup> 9   | <sup>1 2</sup> 9 |
| <sup>1</sup> 5 | 6                  | <sup>1</sup> 4     | <sup>1 2</sup> 6 | <sup>2</sup> 4   | <sup>2</sup> 4   | <sup>1</sup> 4   | <sup>1 2</sup> 3 | <sup>1 2</sup> 9 |

|                           |  |  |  |   |  |                           |                           |                           |
|---------------------------|--|--|--|---|--|---------------------------|---------------------------|---------------------------|
| 1                         | <sup>2</sup> <sub>6</sub>              | 4                                      | 3                                      | 9   | 5                                      | <sup>2</sup> <sub>6</sub> | 8                         | 7                         |
| <sup>2</sup> <sub>8</sub> | 3                                      | <sup>5</sup> <sub>6</sub>              | 4                                      | 7   | <sup>6</sup> <sub>8</sub>              | 9                         | <sup>2</sup> <sub>5</sub> | 1                         |
| <sup>8</sup> <sub>9</sub> | 7                                      | <sup>5</sup> <sub>6</sub> <sup>9</sup> | <sup>1</sup> <sub>8</sub>              | 2   | <sup>1</sup> <sub>6</sub> <sup>8</sup> | 3                         | <sup>5</sup> <sub>6</sub> | 4                         |
| <sup>3</sup> <sub>7</sub> | <sup>5</sup> <sub>9</sub>              | 1                                      | <sup>4</sup> <sub>7</sub> <sup>8</sup> | <sup>3</sup> <sub>2</sub>                           | <sup>2</sup> <sub>5</sub>              | <sup>4</sup> <sub>9</sub> | <sup>2</sup> <sub>6</sub> |                           |
| 4                         | 8                                      | 2                                      | 5                                      | 6   | 9                                      | 7                         | 1                         | 3                         |
| 6                         | <sup>5</sup> <sub>9</sub> <sup>7</sup> | <sup>3</sup> <sub>1</sub>              | <sup>2</sup> <sub>4</sub>              | <sup>3</sup> <sub>1</sub> <sup>2</sup> <sub>8</sub> | <sup>2</sup> <sub>5</sub>              | <sup>4</sup> <sub>9</sub> | <sup>2</sup> <sub>8</sub> |                           |
| <sup>2</sup> <sub>3</sub> | 1                                      | <sup>3</sup> <sub>6</sub>              | <sup>2</sup> <sub>6</sub>              | 5   | 4                                      | 8                         | 7                         | 9                         |
| 5                         | <sup>2</sup> <sub>6</sub>              | 8                                      | 9                                      | 1   | 7                                      | 4                         | 3                         | <sup>2</sup> <sub>6</sub> |
| <sup>7</sup> <sub>9</sub> | 4                                      | <sup>7</sup> <sub>9</sub>              | <sup>2</sup> <sub>6</sub>              | 8   | 3                                      | 1                         | <sup>2</sup> <sub>6</sub> | 5                         |

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| <sup>4</sup> <sub>7</sub>                           | <sup>4</sup> <sub>7</sub>                           | <sup>2</sup> <sub>1</sub>                           | <sup>2</sup> <sub>7</sub>                           | 8   | 5   | 9   | 3   | 6   |
| <sup>5</sup> <sub>7</sub> <sup>6</sup> <sub>7</sub> | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | <sup>2</sup> <sub>5</sub> <sup>8</sup> <sub>7</sub> | 3   | <sup>2</sup> <sub>7</sub>                           | 9   | 1   | 4   | <sup>2</sup> <sub>5</sub> <sup>8</sup> <sub>7</sub> |
| 3   | 9   | <sup>2</sup> <sub>5</sub> <sup>8</sup> <sub>7</sub> | <sup>1</sup> <sub>6</sub> <sup>4</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub>                           | <sup>2</sup> <sub>5</sub>                           | 7   | <sup>2</sup> <sub>5</sub> <sup>8</sup> <sub>7</sub> |   |
| 2   | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | 9   | <sup>5</sup> <sub>7</sub>                           | 3   | <sup>4</sup> <sub>7</sub>                           | 8   | <sup>5</sup> <sub>6</sub>                           | 1   |
| <sup>4</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | 8   | <sup>4</sup> <sub>5</sub> <sup>7</sup>              | <sup>1</sup> <sub>2</sub> <sup>5</sup> <sub>7</sub> | <sup>2</sup> <sub>4</sub> <sup>5</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sub>7</sub> | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | 9   | 3   |
| 1   | 3   | <sup>4</sup> <sub>5</sub> <sup>7</sup>              | 8   | 9   | 6   | <sup>2</sup> <sub>4</sub> <sup>5<sub>7</sub></sup>  | <sup>2</sup> <sub>5</sub>                           | <sup>2</sup> <sub>4</sub> <sup>5<sub>7</sub></sup>  |
| <sup>5</sup> <sub>7</sub> <sup>8</sup> <sub>9</sub> | <sup>1</sup> <sub>2</sub> <sup>5</sup> <sub>7</sub> | 3   | 4   | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | <sup>2</sup> <sub>7</sub> <sup>8</sup>              | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | <sup>1</sup> <sub>2</sub> <sup>5<sub>6</sub></sup>  | <sup>2</sup> <sub>5</sub> <sup>9</sup> <sub>7</sub> |
| <sup>4</sup> <sub>5</sub> <sup>7</sup> <sup>9</sup> | <sup>4</sup> <sub>5</sub> <sup>7</sup>              | <sup>4</sup> <sub>5</sub> <sup>7</sup>              | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | 1   | 3   | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | 8   | <sup>4</sup> <sub>5</sub> <sup>7</sup> <sup>9</sup> |
| <sup>4</sup> <sub>5</sub> <sup>7</sup> <sup>8</sup> | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sub>5</sub> | 6   | 9   | <sup>2</sup> <sub>5</sub>                           | <sup>2</sup> <sub>7</sub> <sup>8</sup>              | 3   | <sup>1</sup> <sub>2</sub> <sup>5</sup> <sub>7</sub> | <sup>2</sup> <sub>4</sub> <sup>5<sub>7</sub></sup>  |

|   |   |   |   |  |  |   |   |   |
|---|---|---|---|--|--|---|---|---|
| 3   | 6   | <sup>2</sup> <sub>8</sub>                           | 5   | <sup>2</sup> <sub>9</sub>  | 7  | <sup>4</sup> <sub>9</sub>   | 1   | <sup>4</sup> <sub>8</sub>                           |
| 7   | 1   | <sup>2</sup> <sub>9</sub>                           | 8   | 4  | <sup>2</sup> <sub>6</sub>  | 5   | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sub>9</sub>                           | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sub>9</sub> |
| <sup>5</sup> <sub>9</sub>                           | 4   | <sup>2</sup> <sub>5</sub> <sup>8</sup>              | 1   | <sup>2</sup> <sub>6</sub> <sup>9</sup>                           | 3  | <sup>2</sup> <sub>6</sub> <sup>8<sup>9</sup></sup>                            | <sup>2</sup> <sub>6</sub> <sup>8<sup>9</sup></sup>                            | 7   |
| <sup>4</sup> <sub>8</sub>                           | <sup>2</sup> <sub>8</sub>                           | 3   | 6   | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sub>5</sub>              | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sub>5</sub>              | <sup>4</sup> <sub>7</sub>   | 9   | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sub>5</sub> |
| 6   | 5   | 7   | 9   | <sup>1</sup> <sub>2</sub> <sup>3</sup> <sup>4</sup> <sub>8</sub> | <sup>1</sup> <sub>2</sub> <sup>3</sup> <sup>4</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sub>4</sub>                           | <sup>2</sup> <sub>3</sub> <sup>1</sup> <sub>2</sub> <sup>3</sup> <sub>4</sub> |   |
| 1   | <sup>2</sup> <sub>9</sub> <sup>4</sup> <sub>9</sub> | <sup>4</sup> <sub>7</sub> <sup>3</sup> <sub>7</sub> | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sub>5</sub> | <sup>2</sup> <sub>4</sub> <sup>5<sup>6</sup><sub>7</sub></sup>   | 8  | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sub>5</sub> <sup>6</sup> <sub>7</sub> |   |
| <sup>4</sup> <sub>8</sub>                           | 3   | 1   | <sup>4</sup> <sub>7</sub>                           | 5  | 9  | <sup>4</sup> <sub>7</sub> <sup>6</sup> <sup>8<sup>9</sup></sup>               | <sup>4</sup> <sub>7</sub> <sup>6</sup> <sup>8<sup>9</sup></sup>               | <sup>2</sup> <sub>8</sub>                           |
| 2   | <sup>7</sup> <sub>9</sub>                           | 6   | <sup>4</sup> <sub>7</sub> <sup>3</sup> <sub>7</sub> | <sup>3</sup> <sub>4</sub> <sup>8</sup>                           | 1  | <sup>4</sup> <sub>5</sub> <sup>7</sup> <sup>9</sup>                           | <sup>4</sup> <sub>5</sub> <sup>7</sup> <sup>9</sup>                           |   |
| <sup>5</sup> <sub>9</sub> <sup>7</sup> <sup>8</sup> | <sup>4</sup> <sub>5</sub>                           | 2   | <sup>1</sup> <sub>6</sub> <sup>1</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub> <sup>3</sup> <sub>4</sub> <sup>8</sup> | <sup>3</sup> <sub>4</sub> <sup>8</sup>                           | <sup>4</sup> <sub>7</sub> <sup>3</sup> <sub>4</sub> <sup>8</sup>              | <sup>4</sup> <sub>7</sub> <sup>3</sup> <sub>4</sub> <sup>8</sup>              |   |

|   |  |   |  |   |   |  |  |   |
|---|--|---|--|---|---|--|--|---|
| 7   | 2  | <sup>3</sup> <sub>6</sub>   | <sup>3</sup> <sub>8</sub> <sup>9</sup>                           | 1   | <sup>3</sup> <sub>8</sub> <sup>9</sup>  | 5  | <sup>6</sup> <sub>9</sub>  | 4 |
| <sup>1</sup> <sub>5</sub> <sup>6</sup> <sub>9</sub>                           | 4  | <sup>5</sup> <sub>6</sub>   | 2  | <sup>5</sup> <sub>6</sub> <sup>9</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>                           | 8   | <sup>1</sup> <sub>7</sub> <sup>6</sup> <sub>9</sub>              | <sup>1</sup> <sub>7</sub> <sup>6</sup> <sub>9</sub>              | 3 |
| <sup>1</sup> <sub>5</sub> <sup>6</sup> <sub>9</sub>                           | <sup>3</sup> <sub>1</sub> <sup>6</sup> <sub>9</sub>              | 8   | <sup>4</sup> <sub>7</sub> <sup>9</sup>                           | <sup>5</sup> <sub>6</sub> <sup>4</sup> <sub>5</sub> <sup>9</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup> | <sup>3</sup> <sub>1</sub> <sup>6</sup> <sub>9</sub>                           | <sup>1</sup> <sub>7</sub> <sup>6</sup> <sub>9</sub>              | <sup>1</sup> <sub>7</sub> <sup>6</sup> <sub>9</sub>              | 2 |
| <sup>2</sup> <sub>4</sub> <sup>5<sup>6</sup><sub>8</sub></sup>                | <sup>6</sup> <sub>4</sub> <sup>5<sup>6</sup><sub>8</sub></sup>   | <sup>2</sup> <sub>4</sub> <sup>5<sup>6</sup><sub>8</sub></sup>                | <sup>4</sup> <sub>9</sub>  | 7   | <sup>4</sup> <sub>6</sub> <sup>9</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup> | <sup>2</sup> <sub>9</sub>  | 3  | 1 |
| <sup>1</sup> <sub>4</sub> <sup>3</sup> <sub>1</sub> <sup>3</sup> <sub>4</sub> | <sup>9</sup> <sub>5</sub> <sup>2</sup> <sub>4</sub>              | <sup>1</sup> <sub>4</sub> <sup>3</sup> <sub>1</sub> <sup>3</sup> <sub>4</sub> | <sup>6</sup> <sub>8</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup> | 5   | 2   | <sup>6</sup> <sub>8</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup> | 6  | 8 |
| <sup>1</sup> <sub>2</sub> <sup>3</sup> <sup>6</sup> <sub>7</sub>              | <sup>1</sup> <sub>3<sup>6</sup><sub>7</sub></sub>                | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sub>7</sub>                           | <sup>1</sup> <sub>3<sup>6</sup><sub>7</sub></sub>                | <sup>8</sup> <sub>1</sub> <sup>3</sup> <sup>6</sup> <sub>9</sub>  | <sup>1</sup> <sub>3<sup>6</sup><sub>9</sub></sub>                             | <sup>2</sup> <sub>9</sub>  | 4  | 5 |
| <sup>4</sup> <sub>8</sub> <sup>9</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup> | <sup>3</sup> <sub>4</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup> | <sup>3</sup> <sub>4</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>1</sup> <sub>7</sub> <sup>8</sup> <sup>9</sup>              | <sup>3</sup> <sub>5</sub> <sup>9</sup>  | 2   | <sup>1</sup> <sub>7</sub> <sup>3</sup> <sup>5</sup> <sub>7</sub> | <sup>1</sup> <sub>7</sub> <sup>3</sup> <sup>5</sup> <sub>7</sub> | 6 |
| <sup>2</sup> <sub>3</sub> <sup>8</sup> <sup>7</sup> <sup>8</sup>              | <sup>3</sup> <sub>1</sub> <sup>6</sup> <sub>4</sub>              | <sup>1</sup> <sub>6</sub> <sup>4</sup> <sup>5</sup> <sub>7</sub> <sup>8</sup> | <sup>3</sup> <sub>7</sub> <sup>8</sup> <sup>9</sup>              | <sup>5</sup> <sub>7</sub> <sup>8</sup> <sup>9</sup>   | <sup>3</sup> <sub>7</sub> <sup>8</sup> <sup>9</sup>                           | <sup>3</sup> <sub>7</sub> <sup>8</sup> <sup>9</sup>              | <sup>2</sup> <sub>5</sub> <sup>9</sup> <sub>7</sub>              | 9 |
| <sup>2</sup> <sub>3</sub> <sup>6</sup> <sub>9</sub>                           | <sup>5</sup> <sub>7</sub>  | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sub>9</sub>                           | <sup>1</sup> <sub>7</sub> <sup>9</sup>                           | <sup>3</sup> <sub>1</sub> <sup>3</sup> <sub>9</sub>   | <sup>3</sup> <sub>1</sub> <sup>3</sup> <sub>9</sub>                           | <sup>4</sup> <sub>7</sub>  | <sup>1</sup> <sub>2</sub> <sup>8</sup> <sub>7</sub>              | 8 |

|                           |  |  |  |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|--|--|
| 6                         | <sup>4</sup> <sub>7</sub> <sup>8</sup>                           | <sup>4</sup> <sub>7</sub> <sup>8</sup>                           | 9  | <sup>4</sup> <sub>5</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup> | <sup>2</sup> <sub>3</sub> <sup>1</sup> <sub>3</sub> <sup>2</sup> <sub>5</sub> <sup>8</sup> | 1  | <sup>3</sup> <sub>8</sub>  | <sup>2</sup> <sub>1</sub> <sup>8</sup>                           |
| 5                         | <sup>4</sup> <sub>8</sub> <sup>9</sup>                           | <sup>4</sup> <sub>8</sub> <sup>9</sup>                           | 1  | <sup>4</sup> <sub>6</sub> <sup>4</sup> <sub>6</sub>              | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sub>9</sub>  | <sup>3</sup> <sub>2</sub> <sup>6</sup> <sub>9</sub>                        | <sup>2</sup> <sub>6</sub> <sup>9</sup>                                     | 7  |
| 1                         | <sup>7</sup> <sub>9</sub>  | 3  | 8  | <sup>5</sup> <sub>7</sub> <sup>6</sup> <sup>7</sup>              | <sup>2</sup> <sub>6</sub> <sup>5</sup> <sub>6</sub>  | <sup>2</sup> <sub>5</sub> <sup>6<sup>5</sup><sub>6</sub><sup>9</sup></sup> | <sup>2</sup> <sub>5</sub> <sup>6<sup>5</sup><sub>6</sub><sup>9</sup></sup> | 4  |
| <sup>4</sup> <sub>7</sub> | 2  | 6  | <sup>4</sup> <sub>7</sub>  | 1  | 8  | 9  | 3  | 5  |
| <sup>3</sup> <sub>9</sub> | <sup>5</sup> <sub>8</sub>  | <sup>5</sup> <sub>8</sub>  | <sup>3</sup> <sub>7</sub>  | 2  | <sup>1</sup> <sub>6</sub> <sup>6</sup> <sup>9</sup> <sup>7</sup>                           | <sup>1</sup> <sub>6</sub> <sup>6</sup> <sup>9</sup> <sup>7</sup>           | <sup>1</sup> <sub>6</sub> <sup>6</sup> <sup>9</sup> <sup>7</sup>           | <sup>1</sup> <sub>6</sub> <sup>6</sup> <sup>9</sup> <sup>7</sup> |
| <sup>3</sup> <sub>9</sub> | 1  | <sup>4</sup> <sub>7</sub>  | <sup>4</sup> <sub>7</sub> <sup>6</sup> <sup>9</sup>              | <sup>3</sup> <sub>4</sub> <sup>6</sup> <sup>7</sup> <sup>9</sup> | <sup>5</sup> <sub>7</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>                           | <sup>5</sup> <sub>7</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>           | 8  | 2  |
| <sup>4</sup> <sub>7</sub> | 3  | 1  | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup>              | <sup>4</sup> <sub>6</sub> <sup>7</sup> <sup>9</sup>              | <sup>4</sup> <sub>6</sub> <sup>7</sup> <sup>9</sup>  | <sup>5</sup> <sub>6</sub> <sup>8</sup> <sup>9</sup>                        | <sup>5</sup> <sub>6</sub> <sup>8</sup> <sup>9</sup>                        | <sup>6</sup> <sub>8</sub> <sup>9</sup>                           |
| 2                         | <sup>5</sup> <sub>7</sub> <sup>6</sup> <sup>9</sup>              | <sup>5</sup> <sub>7</sub> <sup>6</sup> <sup>9</sup>              | <sup>5</sup> <sub>6</sub> <sup>7</sup> <sup>9</sup>              | 8  | <sup>6</sup> <sub>7</sub> <sup>9</sup>   | 4  | 1  | 3  |
| 8                         | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>9</sup> | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>9</sup> | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>9</sup> | 3  | 1  | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>9</sup>           | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>9</sup>           | <sup>6</sup> <sub>8</sub> <sup>9</sup>                           |

|  |  |  |   |  |  |  |  |  |
|--|--|--|---|--|--|--|--|--|
| 3  | 7  | <sup>4</sup> <sub>5</sub> <sup>9</sup>   | 1   | <sup>4</sup> <sub>6</sub> <sup>9</sup> <sup>4</sup> <sub>6</sub> <sup>9</sup>          | <sup>2</sup> <sub>5</sub> <sup>6</sup> <sup>9</sup>                                    | <sup>5</sup> <sub>6</sub> <sup>9</sup>   | <sup>2</sup> <sub>5</sub>  | 8                                      |
| 6  | <sup>2</sup> <sub>9</sub>  | <sup>1</sup> <sub>2</sub> <sup>9</sup>   | 8   | <sup>3</sup> <sub>7</sub> <sup>9</sup>   | 5  | <sup>1</sup> <sub>7</sub> <sup>9<sup>7</sup></sup>                                     | <sup>1</sup> <sub>2</sub> <sup>3<sup>5</sup><sub>7</sub></sup>                                     | 4                                      |
| 8  | <sup>4</sup> <sub>5</sub> <sup>9</sup>   | <sup>1</sup> <sub>2</sub> <sup>4</sup> <sub>5</sub> <sup>9</sup>                           | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sup>4</sup> <sub>7</sub> <sup>9</sup> | <sup>3</sup> <sub>4</sub> <sup>6</sup> <sup>4</sup> <sub>7</sub> <sup>9</sup>          | <sup>2</sup> <sub>3</sub> <sup>6</sup> <sup>4</sup> <sub>7</sub> <sup>9</sup>          | <sup>1</sup> <sub>5</sub> <sup>6</sup> <sup>7</sup> <sup>9</sup>                       | <sup>1</sup> <sub>2</sub> <sup>3<sup>5</sup><sub>7</sub></sup>                                     | <sup>2</sup> <sub>3</sub>              |
| 4  | <sup>2</sup> <sub>5</sub> <sup>9</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>2</sup> <sub>5</sub> <sup>9</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>2</sup> <sub>5</sub> <sup>9</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup> | 8  | <sup>1</sup> <sub>2</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>                       | 3  | 6  | <sup>1</sup> <sub>5</sub> <sup>7</sup> |
| <sup>2</sup> <sub>5</sub> <sup>7</sup>                           | 1  | 6  | 9   | <sup>5</sup> <sub>7</sub> <sup>8</sup> <sup>9</sup>                                    | <sup>3</sup> <sub>7</sub> <sup>8</sup> <sup>9</sup>                                    | <sup>2</sup> <sub>3</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>                       | 4  | 8                                      |
| <sup>5</sup> <sub>7</sub>  | <sup>3</sup> <sub>8</sub>  | <sup>3</sup> <sub>8</sub>  | <sup>5</sup> <sub>6</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>1</sup> <sub>4</sub> <sup>5<sup>6</sup><sup>7</sup><sup>8</sup><sup>9</sup></sup> | <sup>1</sup> <sub>4</sub> <sup>5<sup>6</sup><sup>7</sup><sup>8</sup><sup>9</sup></sup> | <sup>1</sup> <sub>4</sub> <sup>5<sup>6</sup><sup>7</sup><sup>8</sup><sup>9</sup></sup> | 2  | 9                                      |
| <sup>1</sup> <sub>2</sub> <sup>5</sup> <sup>8</sup> <sup>9</sup> | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup> | <sup>2</sup> <sub>3</sub> <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup> | 7   | <sup>1</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>                       | <sup>1</sup> <sub>3</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>                       | <sup>1</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>                       | <sup>1</sup> <sub>2</sub> <sup>3<sup>4</sup><sub>5</sub><sup>6</sup><sup>8</sup><sup>9</sup></sup> | <sup>2</sup> <sub>3</sub>              |
| 9  | <sup>2</sup> <sub>3</sub> <sup>5</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | <sup>2</sup> <sub>3</sub> <sup>5</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>              | 4   | <sup>1</sup> <sub>5</sub> <sup>3</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>          | <sup>1</sup> <sub>3<sup>7</sup><sup>8</sup><sup>9</sup></sub>                          | 8  | <sup>1</sup> <sub>2</sub> <sup>3<sup>5</sup><sup>7</sup><sup>8</sup><sup>9</sup></sup>             | 6                                      |
| <sup>1</sup> <sub>5</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup> | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>                           | <sup>4</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>                           | <sup>3</sup> <sub>5</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>              | 2  | <sup>1</sup> <sub>3</sub> <sup>6</sup> <sup>8</sup> <sup>9</sup>                       | <sup>1</sup> <sub>5</sub> <sup>7</sup> <sup>8</sup> <sup>9</sup>                       | <sup>1</sup> <sub>3</sub> <sup>5</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup>                      | 9                                      |

|                               |                           |                                 |                                   |                                 |                                   |                                 |                                 |                                 |
|-------------------------------|---------------------------|---------------------------------|-----------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 7                             | 6                         | <sup>4 5</sup> <sub>8</sub>     | 9                                 | <sup>1 2</sup> <sub>4 5 8</sub> | <sup>1 2</sup> <sub>4 8</sub>     | 3                               | <sup>1</sup> <sub>5 8</sub>     | <sup>2</sup> <sub>4 5 8</sub>   |
| <sup>4</sup> <sub>9</sub>     | <sup>5</sup> <sub>8</sub> | <sup>4 5</sup> <sub>8 9</sub>   | <sup>1 2 3</sup> <sub>4 5 6</sub> | 7                               | <sup>1 2 3</sup> <sub>4 6 8</sub> | <sup>1 2</sup> <sub>4 5 6</sub> | <sup>1</sup> <sub>5 6 8</sub>   | <sup>2</sup> <sub>4 5 8</sub>   |
| 1                             | 2                         | 3                               | <sup>4 5 6</sup> <sub>8</sub>     | <sup>4 5</sup> <sub>8</sub>     | <sup>4</sup> <sub>6 8</sub>       | <sup>4 5 6</sup> <sub>7 9</sub> | <sup>5 6</sup> <sub>7 8 9</sub> | <sup>4 5</sup> <sub>7 8 9</sub> |
| <sup>2 3</sup> <sub>1 5</sub> | <sup>3</sup> <sub>7</sub> | <sup>1 2 3</sup> <sub>4 5</sub> | <sup>1 2 3</sup> <sub>4 5 8</sub> | 9                               | <sup>1</sup> <sub>4 5</sub>       | <sup>1</sup> <sub>5 8</sub>     | <sup>3</sup> <sub>6</sub>       | <sup>2</sup> <sub>4 5 8</sub>   |
| <sup>2 3</sup> <sub>1 5</sub> | <sup>3</sup> <sub>7</sub> | <sup>5</sup> <sub>9</sub>       | <sup>1 2 3</sup> <sub>4 5 7</sub> | 6                               | <sup>1 2 3</sup> <sub>4 8</sub>   | <sup>1</sup> <sub>4 5 7</sub>   | <sup>1</sup> <sub>5 8</sub>     | <sup>3</sup> <sub>4 5 7 8</sub> |
| 8                             | 4                         | 6                               | <sup>1</sup> <sub>5 7</sub>       | <sup>1</sup> <sub>5</sub>       | <sup>1</sup> <sub>3</sub>         | <sup>1</sup> <sub>5 7 9</sub>   | 2                               | <sup>3</sup> <sub>5 7 9</sub>   |
| 5                             | 9                         | 2                               | 8                                 | <sup>1</sup> <sub>3</sub>       | <sup>1</sup> <sub>3 6</sub>       | <sup>6</sup> <sub>7</sub>       | 4                               | <sup>3</sup> <sub>7</sub>       |
| <sup>4</sup> <sub>3</sub>     | 7                         | 1                               | <sup>2 3</sup> <sub>4 6</sub>     | <sup>2 3</sup> <sub>4 9</sub>   | 5                                 | 8                               | <sup>3</sup> <sub>6 9</sub>     | <sup>2 3</sup> <sub>9</sub>     |
| 6                             | <sup>3</sup> <sub>8</sub> | <sup>4</sup> <sub>8</sub>       | <sup>2 3</sup> <sub>4</sub>       | <sup>2 3</sup> <sub>4 9</sub>   | 7                                 | <sup>2</sup> <sub>5 9</sub>     | <sup>3</sup> <sub>5 9</sub>     | 1                               |

|   |                           |                           |                             |                             |                                 |                           |                               |                             |
|---|---------------------------|---------------------------|-----------------------------|-----------------------------|---------------------------------|---------------------------|-------------------------------|-----------------------------|
| 5 | <sup>6</sup> <sub>9</sub> | 8                         | <sup>3</sup> <sub>6 7</sub> | 4                           | <sup>1</sup> <sub>6 7 5 6</sub> | <sup>3</sup> <sub>9</sub> | 2                             | <sup>1</sup> <sub>7 5</sub> |
| 7 | <sup>6</sup> <sub>9</sub> | 4                         | <sup>2 3</sup> <sub>6</sub> | <sup>1 2</sup> <sub>5</sub> | <sup>1 2</sup> <sub>5 6</sub>   | <sup>3</sup> <sub>9</sub> | 8                             | <sup>1</sup> <sub>5</sub>   |
| 1 | 3                         | 2                         | 9                           | 8                           | <sup>5</sup> <sub>7</sub>       | 6                         | <sup>5</sup> <sub>7</sub>     | 4                           |
| 9 | 7                         | 1                         | 4                           | 6                           | 8                               | 5                         | 3                             | 2                           |
| 8 | 4                         | 5                         | <sup>2</sup> <sub>7</sub>   | <sup>2</sup> <sub>7</sub>   | 3                               | 1                         | 6                             | 9                           |
| 6 | 2                         | 3                         | 1                           | <sup>5</sup> <sub>9</sub>   | <sup>5</sup> <sub>9</sub>       | 7                         | 4                             | 8                           |
| 4 | 1                         | 6                         | 5                           | <sup>2</sup> <sub>7 9</sub> | <sup>2</sup> <sub>7 9</sub>     | 8                         | <sup>7</sup> <sub>9</sub>     | 3                           |
| 3 | 8                         | <sup>7</sup> <sub>9</sub> | <sup>6</sup> <sub>7</sub>   | <sup>1</sup> <sub>7 9</sub> | 4                               | 2                         | <sup>1</sup> <sub>5 7 9</sub> | <sup>5 6</sup> <sub>7</sub> |
| 2 | 5                         | <sup>7</sup> <sub>9</sub> | 8                           | 3                           | <sup>1</sup> <sub>6 7 9</sub>   | 4                         | <sup>1</sup> <sub>7 9</sub>   | <sup>6</sup> <sub>7</sub>   |

|                               |                                 |                               |                                   |                               |                                 |                                 |                               |                             |
|-------------------------------|---------------------------------|-------------------------------|-----------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|-----------------------------|
| <sup>1</sup> <sub>9</sub>     | <sup>1</sup> <sub>3 6</sub>     | 2                             | 4                                 | 7                             | <sup>3</sup> <sub>6 9</sub>     | <sup>3</sup> <sub>6 9</sub>     | 5                             | 8                           |
| <sup>4</sup> <sub>7 8 9</sub> | <sup>3</sup> <sub>4 5 6 7</sub> | <sup>3</sup> <sub>4 6</sub>   | <sup>2 3</sup> <sub>5 6 8 9</sub> | <sup>3</sup> <sub>5 6 8</sub> | <sup>3</sup> <sub>5 6 8 9</sub> | <sup>2 3</sup> <sub>6 7 9</sub> | <sup>1</sup> <sub>6 7 9</sub> | <sup>3</sup> <sub>6</sub>   |
| <sup>7</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>5 6 7</sub>   | <sup>3</sup> <sub>6</sub>     | <sup>2 3</sup> <sub>5 6 8 9</sub> | <sup>3</sup> <sub>5 6 8</sub> | 1                               | <sup>2 3</sup> <sub>6 7 9</sub> | 4                             | <sup>3</sup> <sub>6</sub>   |
| <sup>1</sup> <sub>4 7</sub>   | <sup>1</sup> <sub>3 4 6 7</sub> | <sup>1</sup> <sub>3 4 6</sub> | <sup>3</sup> <sub>5 6 7</sub>     | 2                             | <sup>4 5 6</sup> <sub>3</sub>   | <sup>3</sup> <sub>8 6</sub>     | <sup>6</sup> <sub>7</sub>     | 9                           |
| 5                             | 2                               | 8                             | 1                                 | 9                             | <sup>3</sup> <sub>6</sub>       | 4                               | <sup>6</sup> <sub>7</sub>     | <sup>3</sup> <sub>6</sub>   |
| <sup>4</sup> <sub>7</sub>     | <sup>3</sup> <sub>4 6 7</sub>   | 9                             | <sup>3</sup> <sub>6 7 8</sub>     | <sup>3</sup> <sub>4 6 8</sub> | <sup>3</sup> <sub>4 6 8</sub>   | 1                               | 2                             | 5                           |
| 2                             | <sup>1</sup> <sub>4 7 9</sub>   | <sup>1</sup> <sub>4 7</sub>   | <sup>5 6</sup> <sub>8 9</sub>     | <sup>4 5 6</sup> <sub>8</sub> | <sup>4 5 6</sup> <sub>8 9</sub> | <sup>6</sup> <sub>8 9</sub>     | 3                             | <sup>1</sup> <sub>4 6</sub> |
| 3                             | <sup>1</sup> <sub>4 9</sub>     | <sup>1</sup> <sub>4</sub>     | <sup>6</sup> <sub>8 9</sub>       | <sup>1</sup> <sub>4 6 8</sub> | 7                               | 5                               | <sup>6</sup> <sub>8 9</sub>   | 2                           |
| 6                             | 8                               | 5                             | <sup>3</sup> <sub>4 9</sub>       | <sup>1</sup> <sub>3 4</sub>   | 2                               | <sup>1</sup> <sub>7 9</sub>     | <sup>1</sup> <sub>4 9</sub>   | <sup>1</sup> <sub>7</sub>   |

|                               |                                 |                                 |                                 |                                   |                                   |                               |                               |                                 |
|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-------------------------------|---------------------------------|
| <sup>3</sup> <sub>5 6 9</sub> | 7                               | 2                               | <sup>3</sup> <sub>6 9</sub>     | <sup>3</sup> <sub>5 6 8</sub>     | <sup>3</sup> <sub>6 8 9</sub>     | <sup>1</sup> <sub>5 8 9</sub> | 4                             | <sup>1</sup> <sub>5 6 8 9</sub> |
| <sup>4 5 6</sup> <sub>9</sub> | 1                               | <sup>4 5</sup> <sub>9</sub>     | <sup>4</sup> <sub>6 7 9</sub>   | <sup>4 5 6</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>6 8 9</sub>     | <sup>5</sup> <sub>8 9</sub>   | 3                             | 2                               |
| 8                             | <sup>4</sup> <sub>6</sub>       | <sup>3</sup> <sub>4 5 9</sub>   | <sup>2 3</sup> <sub>4 6 9</sub> | <sup>2 3</sup> <sub>4 5 6</sub>   | 1                                 | <sup>5</sup> <sub>9</sub>     | 7                             | <sup>5 6</sup> <sub>9</sub>     |
| <sup>4</sup> <sub>9</sub>     | <sup>3</sup> <sub>4 8</sub>     | <sup>2 3</sup> <sub>7</sub>     | <sup>3</sup> <sub>4 9</sub>     | 1                                 | 5                                 | <sup>2 3</sup> <sub>8 9</sub> | 6                             | <sup>3</sup> <sub>8 9</sub>     |
| <sup>1</sup> <sub>3 6 9</sub> | 5                               | <sup>2 3</sup> <sub>8 9</sub>   | <sup>2 3</sup> <sub>6 8</sub>   | <sup>3</sup> <sub>6 8 9</sub>     | 4                                 | <sup>1</sup> <sub>8 9</sub>   | 7                             | <sup>3</sup> <sub>8 9</sub>     |
| <sup>1</sup> <sub>4 6 9</sub> | <sup>2 3</sup> <sub>4 6 8</sub> | <sup>2 3</sup> <sub>4 6 8</sub> | <sup>3</sup> <sub>4 6 8 9</sub> | <sup>3</sup> <sub>4 6 8 9</sub>   | <sup>1 2 3</sup> <sub>5 8 9</sub> | <sup>1</sup> <sub>5 8 9</sub> | <sup>1</sup> <sub>5 8 9</sub> | <sup>3</sup> <sub>8 9</sub>     |
| 7                             | 9                               | <sup>1</sup> <sub>4 8</sub>     | <sup>3</sup> <sub>5 4 6 8</sub> | <sup>3</sup> <sub>4 6 8</sub>     | <sup>1</sup> <sub>3 8</sub>       | 2                             | <sup>1</sup> <sub>4 8</sub>   | <sup>3</sup> <sub>8</sub>       |
| <sup>4 5</sup> <sub>3 8</sub> | <sup>3</sup> <sub>4 8</sub>     | <sup>3</sup> <sub>6 8</sub>     | 1                               | <sup>3</sup> <sub>4</sub>         | 2                                 | 7                             | <sup>5</sup> <sub>8 9</sub>   | <sup>4 5</sup> <sub>8 9</sub>   |
| 2                             | <sup>4</sup> <sub>3 4 5</sub>   | <sup>1</sup> <sub>4 5 3</sub>   | 8                               | 9                                 | 7                                 | 6                             | <sup>1</sup> <sub>5 4 5</sub> | <sup>3</sup> <sub>4 5</sub>     |

|                                 |                                 |                                 |                               |                                 |                               |                               |                                 |                               |
|---------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|
| <sup>1 2 3</sup> <sub>7 9</sub> | <sup>1 2 3</sup> <sub>7 9</sub> | <sup>3</sup> <sub>6 9</sub>     | 5                             | <sup>2</sup> <sub>6 8 9</sub>   | <sup>6</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>8 9</sub>   | 4                               | <sup>1</sup> <sub>3 8</sub>   |
| <sup>5 6</sup> <sub>8 9</sub>   | <sup>4</sup> <sub>8 9</sub>     | <sup>4 5 6</sup> <sub>8 9</sub> | <sup>6</sup> <sub>9</sub>     | 1                               | 3                             | 2                             | <sup>5</sup> <sub>9</sub>       | 7                             |
| <sup>1 2 3</sup> <sub>7 9</sub> | <sup>1 2 3</sup> <sub>7 9</sub> | <sup>3</sup> <sub>5 9</sub>     | 2                             | 4                               | <sup>7 8 9</sup> <sub>9</sub> | 6                             | <sup>1</sup> <sub>5 9</sub>     | <sup>1</sup> <sub>3 5 8</sub> |
| 4                               | <sup>1</sup> <sub>7 8 9</sub>   | <sup>3</sup> <sub>6 8 9</sub>   | <sup>1</sup> <sub>6 9</sub>   | <sup>3</sup> <sub>5 6 8 9</sub> | <sup>5 6</sup> <sub>8 9</sub> | <sup>1</sup> <sub>5 8</sub>   | <sup>1</sup> <sub>5 6</sub>     | 2                             |
| <sup>1</sup> <sub>7 8 9</sub>   | <sup>3</sup> <sub>6 8 9</sub>   | <sup>3</sup> <sub>5 6 8 9</sub> | <sup>1 2</sup> <sub>6 9</sub> | <sup>2 3</sup> <sub>6 8 9</sub> | <sup>6</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>8</sub>     | <sup>1</sup> <sub>6 4 6</sub>   | <sup>1</sup> <sub>8</sub>     |
| <sup>1</sup> <sub>6 8</sub>     | <sup>1</sup> <sub>8</sub>       | 2                               | 7                             | <sup>5 6</sup> <sub>8</sub>     | 4                             | 3                             | <sup>5 6<sub>1</sub></sup>      | 9                             |
| <sup>5</sup> <sub>9</sub>       | 6                               | <sup>4 5</sup> <sub>9</sub>     | 3                             | 7                               | 2                             | <sup>1</sup> <sub>4 5 9</sub> | 8                               | <sup>1</sup> <sub>4 5</sub>   |
| <sup>2 3</sup> <sub>5 8 9</sub> | <sup>2 3</sup> <sub>8 9</sub>   | 7                               | 4                             | <sup>5 6</sup> <sub>9</sub>     | 1                             | <sup>5</sup> <sub>9</sub>     | <sup>2 3</sup> <sub>5 6 9</sub> | <sup>3</sup> <sub>5 6</sub>   |
| <sup>2 3</sup> <sub>5 9</sub>   | <sup>2 3</sup> <sub>4 9</sub>   | 1                               | 8                             | <sup>5 6</sup> <sub>9</sub>     | <sup>5 6</sup> <sub>9</sub>   | 7                             | <sup>2 3</sup> <sub>5 6 9</sub> | <sup>3</sup> <sub>4 5 6</sub> |

|                               |                                 |                               |                             |                               |                             |                                 |                                 |                                 |
|-------------------------------|---------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|
| <sup>4 5 6</sup> <sub>7</sub> | <sup>4 5 6</sup> <sub>7</sub>   | <sup>4 5</sup> <sub>7</sub>   | <sup>4</sup> <sub>6 9</sub> | <sup>4 5</sup> <sub>8 9</sub> | 2                           | 1                               | <sup>4 5</sup> <sub>7 8 9</sub> | <sup>5 6</sup> <sub>7 8 9</sub> |
| 9                             | <sup>1</sup> <sub>4 5 6</sub>   | 2                             | <sup>1</sup> <sub>4 6</sub> | 7                             | <sup>1</sup> <sub>8</sub>   | <sup>5 6<sub>1</sub></sup>      | 3                               | <sup>5 6</sup> <sub>8</sub>     |
| <sup>4 5 6</sup> <sub>7</sub> | 8                               | <sup>1</sup> <sub>4 5 7</sub> | 3                           | <sup>1</sup> <sub>4 5 9</sub> | <sup>1</sup> <sub>9</sub>   | <sup>2</sup> <sub>5 6 9 7</sub> | <sup>4 5</sup> <sub>9 7</sub>   | <sup>5 6</sup> <sub>9 7</sub>   |
| <sup>4 5</sup> <sub>7</sub>   | <sup>4 5</sup> <sub>7</sub>     | <sup>4 5</sup> <sub>7</sub>   | 2                           | <sup>1</sup> <sub>8 9</sub>   | <sup>1</sup> <sub>8 9</sub> | <sup>3</sup> <sub>6 8 9</sub>   | <sup>3</sup> <sub>6</sub>       | <sup>3</sup> <sub>6</sub>       |
| <sup>2</sup> <sub>8</sub>     | <sup>2</sup> <sub>9</sub>       | <sup>2</sup> <sub>8 9</sub>   | 5                           | 3                             | 6                           | 7                               | 1                               | 4                               |
| 1                             | 3                               | 6                             | <sup>4</sup> <sub>9</sub>   | <sup>4</sup> <sub>8 9</sub>   | 7                           | <sup>2</sup> <sub>5 9</sub>     | <sup>5</sup> <sub>8 9</sub>     | <sup>2</sup> <sub>5 8 9</sub>   |
| <sup>4</sup> <sub>3</sub>     | 7                               | <sup>1</sup> <sub>4 3</sub>   | <sup>1</sup> <sub>9</sub>   | 6                             | 5                           | 8                               | 2                               | <sup>1</sup> <sub>3 9</sub>     |
| <sup>2 3</sup> <sub>5 6</sub> | <sup>1 2</sup> <sub>5 6 9</sub> | <sup>1</sup> <sub>5 9</sub>   | 8                           | <sup>1 2</sup> <sub>9</sub>   | 4                           | <sup>3</sup> <sub>5 9 7</sub>   | <sup>5</sup> <sub>9 7</sub>     | <sup>1</sup> <sub>5 7 9</sub>   |
| <sup>2</sup> <sub>5 8</sub>   | <sup>1 2</sup> <sub>5 9</sub>   | <sup>1</sup> <sub>5 8 9</sub> | 7                           | <sup>1 2</sup> <sub>9</sub>   | 3                           | 4                               | 6                               | <sup>1</sup> <sub>5 9</sub>     |

|            |              |            |              |              |                  |
|------------|--------------|------------|--------------|--------------|------------------|
| 1 2<br>7 5 | 3<br>7 5     | 6<br>7     | 1 2<br>7     | 1 2<br>7     | 8 9 4            |
| 1 2<br>4   | 4 2<br>6 9   | 8<br>6 9   | 1 2 3<br>4   | 1 2 3<br>4   | 7 3<br>6 5       |
| 4<br>7     | 4 6<br>7 8 9 | 5<br>7 8 9 | 3<br>4 7     | 3<br>4 7     | 3<br>6 1 2       |
| 6<br>7     | 5 5<br>7 9   | 4<br>7 9   | 2 3<br>5 7   | 2 3<br>5 7   | 1 2<br>8 7 9     |
| 5 3<br>7   | 1 4          | 9<br>7     | 2 3<br>5 7   | 2 3<br>5 7   | 3 2<br>5 6 8 7 9 |
| 8<br>7     | 5 9          | 2<br>7     | 1 3<br>7     | 1 3<br>7     | 4 5<br>7 9       |
| 2 3<br>5   | 2 5 6<br>8   | 3 5 6<br>8 | 1 2 3<br>4 5 | 1 3<br>4 5 6 | 9 7<br>8 6       |
| 4 5<br>7   | 4 5 6<br>7   | 5 6<br>7   | 3<br>7       | 8 9          | 2 5 6<br>1       |
| 9<br>7     | 2 5 6<br>7 8 | 1<br>7     | 2 3<br>7     | 3 5 6<br>7   | 3 5 6<br>4 8     |

|            |          |          |                |              |              |            |          |
|------------|----------|----------|----------------|--------------|--------------|------------|----------|
| 1 2 3<br>5 | 2 3<br>5 | 7        | 4 5 6<br>4 5 6 | 4 5<br>9     | 3 1 2<br>6   | 1 2<br>8 9 | 1 2<br>8 |
| 1 2 3<br>5 | 2 3<br>5 | 4        | 8              | 5 6<br>7 9   | 3 1 2<br>6   | 1 2<br>9   |          |
|            | 6        |          | 1 2 3          |              | 4 7 5        |            |          |
| 2 3<br>7 8 | 2 3<br>8 | 2 3      | 9 1            | 5 7<br>8     | 5 6 4        |            |          |
| 6 4        | 5 8      | 7        | 5 3<br>7 8     | 2 9          | 1 5<br>8     | 1 3<br>7 8 |          |
|            | 1        | 5 8 9    | 4 5 6<br>7     | 4 5 6<br>7 8 | 4 5<br>7 8   | 2 5<br>8   | 3<br>7 8 |
| 4          | 8 9      | 2 3<br>7 | 2 5<br>8 9     | 1 7          | 2 3<br>5     | 6          |          |
| 2 3<br>5 8 | 7 6      | 4 5      | 4 5<br>8       | 4 5<br>8     | 1 4 5<br>2 3 | 9          |          |
| 2 5        | 2 5<br>9 | 1        | 3              | 4 5<br>7 9   | 6 8          | 2 4 5<br>7 |          |

|            |                |            |              |              |                |              |            |
|------------|----------------|------------|--------------|--------------|----------------|--------------|------------|
| 1<br>7 9   | 2<br>7 9       | 1 3<br>7 9 | 4 6          | 1 5<br>9     | 1 5<br>7 8     | 5 9          | 1 5<br>8 9 |
| 8 4        | 1 6<br>7 9     | 2 5<br>7 9 | 1 7 9        | 1 5<br>9     | 1 2 5 6<br>7 9 | 2 5 6<br>7 9 | 3          |
| 1 6<br>7 9 | 5 1 3<br>7 9   | 2 6<br>7 9 | 8            | 1 3<br>9     | 1 2 6<br>7     | 4 1 2<br>6 9 |            |
| 3 1 2      | 7 8 9          | 5 8 9      | 4            | 7 9          | 6 9            |              |            |
| 4 5 6<br>7 | 6 4 6<br>7 8 9 | 3 4<br>7 9 | 2 1 5<br>7 8 | 5 9          | 1 5 8 9        |              |            |
| 4 5<br>7   | 4 7 8 9        | 1 4<br>7 9 | 6 2 5<br>7 8 | 3 2 5<br>8 9 |                |              |            |
| 2<br>7     | 3 1 6<br>4 7   | 5 6<br>7   | 1 3<br>4 5   | 9 8          | 5 6<br>7       |              |            |
| 1 6<br>8   | 3 1 6<br>8     | 5 6<br>9   | 1 3<br>9     | 7            | 2 5 6<br>2 5 6 | 4            |            |
| 4 6<br>7   | 9 5            | 6 2<br>8   | 4 8          | 3 1          | 7 6            |              |            |

|            |            |              |              |                |                |  |  |
|------------|------------|--------------|--------------|----------------|----------------|--|--|
| 1<br>4     | 1<br>4 7   | 3            | 6 9 2        | 8 7 5          | 4 5            |  |  |
| 5          | 4 7 9      | 2 1<br>4 9   | 8 1<br>4     | 6 3            | 4 2            |  |  |
| 4 2<br>4   | 8 6        | 3 7          | 5 4 5        | 1 7            | 2 9            |  |  |
| 3 5 1      | 2 6 7      | 9 4 8        |              |                |                |  |  |
| 8 2 7      | 1 4<br>9   | 3 5 6<br>5 6 |              |                |                |  |  |
| 9 6 4      | 5 3 8      | 7 1 2<br>1 2 |              |                |                |  |  |
| 1 2<br>4 6 | 1 3<br>4 9 | 2 5<br>9     | 1 2<br>4 7   | 3 5<br>4 5 6 9 | 2 4 5<br>8 1 6 |  |  |
| 1 2<br>4 6 | 1 3<br>4   | 2 5          | 8 1 2<br>5   | 3 4 5 6<br>4 5 | 2 4 5<br>9 7   |  |  |
| 7 1<br>4 9 | 8 4        | 1 2<br>9     | 5 4 5 6<br>9 | 2 4 5<br>1 6   | 3              |  |  |

|               |                |              |             |                |     |
|---------------|----------------|--------------|-------------|----------------|-----|
| 7<br>8        | 6 1<br>8 6     | 9 4 3<br>8 6 | 2 1 3<br>4  | 4 6 5          |     |
| 3<br>5 6<br>8 | 2 2<br>5 6 8   | 1 4 5 6<br>8 | 4 5 6<br>8  | 9 4 2<br>6     | 7   |
| 5 6<br>9      | 4 1 2<br>5 6 9 | 7 3 5 6      | 3 1 3       | 8 2 3          |     |
| 1<br>7 8 9    | 5 6 3<br>7 8 9 | 2 4 5 7 8 9  | 4 5 7 8 9   | 5 5 4 6<br>7 8 |     |
| 5 6<br>8      | 2 2<br>5 6 8   | 4 5 8        | 1 4 5 7 8 9 | 3 4 6<br>7 8   |     |
| 5<br>8        | 5 4            | 6 5 3<br>7 8 | 5 3<br>7 8  | 2 1 9          |     |
| 4 5 6<br>8 9  | 1 5 6<br>8 9   | 4 5 8        | 2 6 7       | 4 5 4 5<br>7 9 | 2 3 |
| 2<br>5 8      | 7 3            | 4 5 8 9      | 4 5 8 9     | 6 4 5          | 1   |
| 4 5 6<br>9    | 3 5 6<br>9     | 4 5 7        | 2 6 1       | 4 5 4 5<br>7 9 | 8   |

|              |            |            |       |                      |                  |   |  |
|--------------|------------|------------|-------|----------------------|------------------|---|--|
| 4<br>7       | 2<br>7     | 1 3<br>4   | 5 8   | 1 3<br>6             | 9 1 3<br>6       |   |  |
| 5 8 3        | 1 2        | 6 9        | 7 4   | 1 2                  |                  |   |  |
| 4<br>9       | 6 1        | 1 2 3<br>4 | 7 1 3 | 8 1 3<br>5           | 1 2 3<br>5       |   |  |
| 1 4 5<br>7   | 2 7        | 6 3<br>8   | 2 7   | 9 5 6<br>8           | 4 5 6<br>8       |   |  |
| 3 9          | 7 5 6<br>8 | 6 1<br>8   | 4 7   | 4 3<br>6             | 2 4 5 6<br>8     |   |  |
| 2 3<br>8     | 4 3        | 2 6<br>8   | 5 9   | 4 2                  | 1 3 1 3<br>4 6 6 | 7 |  |
| 2 3 1<br>8   | 5 2<br>8   | 9 4 8      | 5 6   | 1 2 3<br>4 6         | 7 1 3<br>4 6     |   |  |
| 2 3 1<br>8 9 | 5 2<br>8 9 | 7 4 8      | 5 6   | 1 2 3 1 3<br>4 6 6 4 | 3 1 3<br>6 4 6   |   |  |
| 6 7 4        | 1 3        | 2 1 3      | 5 8 9 |                      |                  |   |  |

|                               |                                 |                                 |                               |                               |                               |                               |                                 |                             |                               |
|-------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------------------------|
| 9                             | 4 <sup>3</sup> <sub>7 8</sub>   | 1 <sup>3</sup> <sub>4 7</sub>   | 3                             | 6                             | 1 <sup>2</sup> <sub>8</sub>   | 2 <sup>1</sup> <sub>7 8</sub> | 1 <sup>1 2</sup> <sub>4 8</sub> | 5                           | 1 <sup>2 3</sup> <sub>4</sub> |
| 1 <sup>5</sup> <sub>7 8</sub> | 4 <sup>5 6</sup> <sub>7 8</sub> | 1 <sup>4 5 6</sup> <sub>7</sub> | 3                             | 3                             | 1 <sup>2</sup> <sub>5 8</sub> | 1 <sup>5</sup> <sub>7 8</sub> | 1 <sup>2</sup> <sub>4 6</sub>   | 9                           | 1 <sup>2</sup> <sub>4</sub>   |
| 1 <sup>5</sup> <sub>8</sub>   | 2                               | 1 <sup>3</sup> <sub>5 6</sub>   | 1 <sup>5</sup> <sub>8</sub>   | 9                             | 4                             | 7                             | 1 <sup>3</sup> <sub>6</sub>     | 1 <sup>3</sup> <sub>8</sub> | 3                             |
| 6                             | 4 <sup>5</sup> <sub>7</sub>     | 9                               | 1 <sup>4 5</sup> <sub>7</sub> | 2                             | 3                             | 1 <sup>7</sup> <sub>7</sub>   | 8                               | 8                           |                               |
| 5 <sup>7 8</sup>              | 1                               | 4 <sup>5</sup> <sub>7</sub>     | 4 <sup>5</sup> <sub>7 8</sub> | 3                             | 5 <sup>8 9</sup>              | 5 <sup>9</sup>                | 2                               | 6                           |                               |
| 2 <sup>5</sup> <sub>7 8</sub> | 3 <sup>5</sup> <sub>7 8</sub>   | 2 <sup>3</sup> <sub>5</sub>     | 1 <sup>5</sup> <sub>7 8</sub> | 6                             | 1 <sup>5</sup> <sub>8 9</sub> | 1 <sup>5</sup> <sub>9</sub>   | 4                               | 1 <sup>5</sup> <sub>7</sub> |                               |
| 3                             | 5 <sup>7</sup>                  | 1 <sup>2</sup> <sub>5</sub>     | 1 <sup>4 5</sup> <sub>8</sub> | 6                             | 1 <sup>4 5</sup> <sub>8</sub> | 1 <sup>2</sup> <sub>4 5</sub> | 9                               |                             |                               |
| 1 <sup>2</sup> <sub>5</sub>   | 5 <sup>6</sup> <sub>7</sub>     | 8                               | 9                             | 1 <sup>4 5</sup> <sub>8</sub> | 3                             | 1 <sup>2</sup> <sub>4 5</sub> | 6 <sup>4 5</sup> <sub>7</sub>   | 4 <sup>5</sup> <sub>7</sub> | 1 <sup>2</sup> <sub>4 5</sub> |
| 4                             | 9                               | 1 <sup>5 6</sup> <sub>8</sub>   | 2                             | 7                             | 1 <sup>5</sup> <sub>8</sub>   | 1 <sup>5 6</sup> <sub>8</sub> | 1 <sup>3</sup> <sub>6</sub>     | 1 <sup>3</sup> <sub>5</sub> | 3                             |

|                               |                               |                             |                             |                                 |                                 |                                 |                               |                                   |                                   |
|-------------------------------|-------------------------------|-----------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|-----------------------------------|-----------------------------------|
| 3 <sup>1</sup> <sub>8</sub>   | 3 <sup>3</sup> <sub>8 9</sub> | 3                           | 4                           | 5 <sup>3</sup> <sub>7 9</sub>   | 3 <sup>1</sup> <sub>5 8 9</sub> | 6                               | 2                             |                                   |                                   |
| 2 <sup>3</sup> <sub>4</sub>   | 5                             | 6                           | 8                           | 1                               | 2 <sup>3</sup> <sub>9</sub>     | 4 <sup>7</sup> <sub>9</sub>     | 4 <sup>7</sup> <sub>9</sub>   | 3                                 |                                   |
| 2 <sup>3</sup> <sub>4</sub>   | 1 <sup>3</sup> <sub>4</sub>   | 7                           | 6                           | 2 <sup>3</sup> <sub>5</sub>     | 2 <sup>3</sup> <sub>5</sub>     | 1 <sup>4 5</sup> <sub>8 9</sub> | 1 <sup>4 5</sup> <sub>8</sub> | 4 <sup>5</sup> <sub>8</sub>       | 3                                 |
| 1                             | 4 <sup>6</sup> <sub>7</sub>   | 2                           | 9                           | 4 <sup>5</sup> <sub>7</sub>     | 8                               | 4 <sup>5</sup> <sub>7</sub>     | 4 <sup>5</sup> <sub>7</sub>   | 4 <sup>5 6</sup> <sub>7</sub>     |                                   |
| 4 <sup>5</sup> <sub>7 8</sub> | 4 <sup>6</sup> <sub>7 8</sub> | 5 <sup>8</sup>              | 2 <sup>5</sup> <sub>7</sub> | 2 <sup>4 5</sup> <sub>7</sub>   | 1 <sup>2</sup> <sub>4 5</sub>   | 3                               | 1 <sup>2</sup> <sub>4 5</sub> | 4 <sup>5 6</sup> <sub>7 8 9</sub> | 4 <sup>5 6</sup> <sub>7 8 9</sub> |
| 9                             | 4 <sup>3</sup> <sub>7 8</sub> | 5 <sup>3</sup> <sub>8</sub> | 2 <sup>3</sup> <sub>5</sub> | 6                               | 1 <sup>2 3</sup> <sub>4 5</sub> | 1 <sup>4 5</sup> <sub>8</sub>   | 1 <sup>2</sup> <sub>4 5</sub> | 4 <sup>5</sup> <sub>7 8</sub>     | 4 <sup>5</sup> <sub>7 8</sub>     |
| 5 <sup>7 8</sup>              | 2                             | 4                           | 1                           | 5 <sup>8 9</sup> <sub>7</sub>   | 5 <sup>9</sup> <sub>7</sub>     | 6                               | 5 <sup>8 9</sup>              | 5 <sup>8 9</sup>                  |                                   |
| 5 <sup>8</sup>                | 3 <sup>8 9</sup>              | 1                           | 2 <sup>3</sup> <sub>5</sub> | 2 <sup>3</sup> <sub>5</sub>     | 6                               | 7                               | 4 <sup>5</sup> <sub>8 9</sub> | 4 <sup>5</sup> <sub>8 9</sub>     |                                   |
| 6                             | 7 <sup>8 9</sup>              | 5 <sup>8 9</sup>            | 5 <sup>7</sup>              | 4 <sup>5</sup> <sub>7 8 9</sub> | 4 <sup>5</sup> <sub>7 9</sub>   | 2                               | 3                             | 1                                 |                                   |

|                |                               |                |                             |                               |                             |                                 |                                 |   |  |
|----------------|-------------------------------|----------------|-----------------------------|-------------------------------|-----------------------------|---------------------------------|---------------------------------|---|--|
| 1 <sup>9</sup> | 4                             | 7              | 2                           | 5 <sup>8</sup>                | 1 <sup>3</sup> <sub>5</sub> | 3 <sup>5</sup> <sub>8 9</sub>   | 5 <sup>8 9</sup>                | 6 |  |
| 8              | 5                             | 3              | 4 <sup>7</sup>              | 9                             | 6                           | 4 <sup>2</sup> <sub>7</sub>     | 2 <sup>7</sup>                  | 1 |  |
| 1 <sup>9</sup> | 6                             | 2              | 4 <sup>5</sup> <sub>7</sub> | 3 <sup>5</sup> <sub>7 8</sub> | 1 <sup>3</sup> <sub>5</sub> | 3 <sup>5</sup> <sub>8 9</sub>   | 5 <sup>4</sup> <sub>7</sub>     |   |  |
| 2 <sup>5</sup> | 1 <sup>9</sup>                | 6              | 5 <sup>7</sup>              | 2 <sup>5</sup> <sub>7</sub>   | 4                           | 1 <sup>9</sup>                  | 3                               | 8 |  |
| 4              | 3 <sup>7</sup>                | 2 <sup>9</sup> | 8                           | 5 <sup>6</sup>                | 1 <sup>5</sup> <sub>9</sub> | 4 <sup>5 6</sup> <sub>9</sub>   | 5 <sup>6 4</sup> <sub>7</sub>   | 2 |  |
| 4              | 3 <sup>1 2</sup> <sub>7</sub> | 1 <sup>5</sup> | 8                           | 2 <sup>5 6</sup> <sub>9</sub> | 5 <sup>9</sup>              | 1 <sup>4 5 6</sup> <sub>9</sub> | 5 <sup>6 4</sup> <sub>7 9</sub> | 2 |  |
| 2 <sup>5</sup> | 1 <sup>2</sup> <sub>5</sub>   | 1 <sup>5</sup> | 9                           | 4                             | 7                           | 6 <sup>8</sup>                  | 6 <sup>8</sup>                  | 3 |  |
| 6              | 8                             | 9              | 1                           | 3                             | 2                           | 7                               | 4                               | 5 |  |
| 7              | 3                             | 4              | 5 <sup>6</sup>              | 5 <sup>6</sup>                | 8                           | 1 <sup>2</sup> <sub>7</sub>     | 1 <sup>2</sup> <sub>7</sub>     | 9 |  |

|                             |                                 |                             |                             |                               |                               |                                 |                             |                             |                |
|-----------------------------|---------------------------------|-----------------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------|-----------------------------|----------------|
| 2 <sup>3</sup> <sub>5</sub> | 2 <sup>4 5 6</sup> <sub>8</sub> | 9                           | 4 <sup>5</sup> <sub>7</sub> | 4 <sup>2 3</sup> <sub>7</sub> | 1                             | 4 <sup>5</sup> <sub>7 8</sub>   | 2 <sup>7</sup> <sub>8</sub> | 4 <sup>6</sup> <sub>7</sub> |                |
| 2 <sup>3</sup> <sub>5</sub> | 7                               | 3 <sup>6</sup>              | 8                           | 4 <sup>2 3</sup> <sub>9</sub> | 4 <sup>5</sup> <sub>9</sub>   | 4 <sup>5</sup> <sub>9</sub>     | 1 <sup>2</sup> <sub>4</sub> | 1 <sup>6</sup> <sub>9</sub> |                |
| 1                           | 4 <sup>5</sup> <sub>8</sub>     | 4 <sup>8</sup>              | 4 <sup>5</sup> <sub>7</sub> | 4 <sup>2</sup> <sub>9</sub>   | 6                             | 4 <sup>5</sup> <sub>7 8 9</sub> | 3                           | 4 <sup>7</sup> <sub>9</sub> |                |
| 4                           | 1 <sup>2</sup> <sub>9</sub>     | 1 <sup>2</sup> <sub>7</sub> | 1 <sup>2</sup> <sub>6</sub> | 8                             | 3                             | 6                               | 1 <sup>7</sup> <sub>9</sub> | 5                           |                |
| 2 <sup>3</sup> <sub>7</sub> | 1 <sup>2</sup> <sub>9</sub>     | 3 <sup>6</sup>              | 1 <sup>2</sup> <sub>4</sub> | 6 <sup>5</sup> <sub>4</sub>   | 2 <sup>3</sup> <sub>7</sub>   | 3 <sup>1</sup> <sub>7 8 9</sub> | 1 <sup>3</sup> <sub>7</sub> | 1 <sup>3</sup> <sub>9</sub> |                |
| 3 <sup>8</sup>              | 1 <sup>8</sup>                  | 6                           | 5                           | 1 <sup>6</sup>                | 7                             | 9                               | 2                           | 4                           | 1 <sup>3</sup> |
| 2 <sup>5</sup> <sub>7</sub> | 1 <sup>2</sup> <sub>4</sub>     | 1 <sup>2</sup> <sub>9</sub> | 2 <sup>3</sup> <sub>4</sub> | 6 <sup>4 5</sup> <sub>9</sub> | 2 <sup>4 5</sup> <sub>7</sub> | 4 <sup>3</sup> <sub>7</sub>     | 9 <sup>7</sup> <sub>9</sub> | 8                           |                |
| 5 <sup>7 8 9</sup>          | 3                               | 4 <sup>7 8</sup>            | 4 <sup>5</sup> <sub>9</sub> | 4 <sup>9</sup> <sub>7</sub>   | 1                             | 6                               | 2                           |                             |                |
| 6                           | 4 <sup>2</sup> <sub>9</sub>     | 4 <sup>2</sup> <sub>7</sub> | 2 <sup>3</sup> <sub>4</sub> | 1                             | 8                             | 4 <sup>3</sup> <sub>7</sub>     | 5                           | 4 <sup>3</sup> <sub>7</sub> | 9              |

|                               |                             |                                 |                                 |                                 |                             |                               |                             |                                 |                             |
|-------------------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------|-------------------------------|-----------------------------|---------------------------------|-----------------------------|
| 9                             | 1 <sup>6</sup> <sub>7</sub> | 1 <sup>3</sup> <sub>7 8</sub>   | 3                               | 2                               | 4                           | 3 <sup>6</sup>                | 5                           | 3 <sup>8</sup> <sub>6</sub>     | 3 <sup>6</sup>              |
| 4 <sup>5 6</sup> <sub>8</sub> | 2                           | 4 <sup>5 6</sup> <sub>8</sub>   | 3 <sup>6</sup> <sub>7</sub>     | 3 <sup>6</sup> <sub>9</sub>     | 3 <sup>6</sup> <sub>9</sub> | 3 <sup>6</sup> <sub>9</sub>   | 1                           | 4 <sup>8</sup> <sub>6</sub>     | 3 <sup>6</sup>              |
| 4 <sup>6</sup> <sub>7</sub>   | 4 <sup>6</sup> <sub>7</sub> | 4 <sup>6</sup> <sub>7</sub>     | 3 <sup>6</sup>                  | 5                               | 8                           | 1                             | 2 <sup>3</sup> <sub>7</sub> | 2 <sup>3</sup> <sub>9</sub>     | 2 <sup>3</sup> <sub>4</sub> |
| 2                             | 8                           | 1 <sup>9</sup>                  | 1 <sup>3</sup> <sub>9</sub>     | 5                               | 7                           | 6                             | 4 <sup>3</sup> <sub>4</sub> | 1 <sup>3</sup> <sub>4</sub>     | 3                           |
| 3                             | 1 <sup>6</sup> <sub>7</sub> | 1 <sup>6</sup> <sub>9</sub>     | 1 <sup>6</sup> <sub>8 9</sub>   | 1 <sup>2</sup> <sub>6</sub>     | 4                           | 1 <sup>2</sup> <sub>8</sub>   | 2 <sup>8</sup>              | 5                               |                             |
| 4 <sup>6</sup>                | 5                           | 1 <sup>4</sup> <sub>6</sub>     | 1 <sup>3</sup> <sub>8</sub>     | 1 <sup>2 3</sup> <sub>6</sub>   | 3 <sup>6</sup> <sub>8</sub> | 1 <sup>2 3</sup> <sub>8</sub> | 9                           | 7                               |                             |
| 4 <sup>5</sup> <sub>7 8</sub> | 4 <sup>7</sup>              | 4 <sup>5</sup> <sub>7 8 9</sub> | 1 <sup>4</sup> <sub>7 8 9</sub> | 1 <sup>3</sup> <sub>7</sub>     | 9                           | 8 <sup>9</sup>                | 6                           | 1 <sup>2 3</sup> <sub>8 9</sub> |                             |
| 7 <sup>8</sup>                | 6                           | 3                               | 2                               | 1 <sup>6</sup> <sub>7 8 9</sub> | 5                           | 4                             | 7 <sup>8</sup>              | 8 <sup>9</sup>                  | 1                           |
| 1                             | 4 <sup>6</sup> <sub>7</sub> | 4 <sup>6</sup> <sub>9</sub>     | 4 <sup>6</sup> <sub>7 8 9</sub> | 3 <sup>6</sup> <sub>7</sub>     | 2                           | 3 <sup>8 9</sup>              | 5                           | 8 <sup>9</sup>                  |                             |

|                                 |                    |                             |                             |                             |                             |                             |                               |                                 |                                 |
|---------------------------------|--------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------------------|---------------------------------|
| 1                               | 5 <sup>7 8</sup>   | 2                           | 3 <sup>6</sup> <sub>8</sub> | 3 <sup>5</sup> <sub>8</sub> | 4                           | 9                           | 5 <sup>6</sup> <sub>7 8</sub> | 5 <sup>3</sup> <sub>7 8</sub>   | 3                               |
| 3 <sup>5 6</sup> <sub>7 8</sub> | 4                  | 5 <sup>6</sup> <sub>7</sub> | 2 <sup>3</sup> <sub>8</sub> | 3 <sup>6</sup> <sub>8</sub> | 9                           | 5 <sup>6</sup> <sub>7</sub> | 2 <sup>3</sup> <sub>6</sub>   | 1 <sup>2 3</sup> <sub>7 8</sub> | 1 <sup>2 3</sup> <sub>5</sub>   |
| 9                               | 5 <sup>8</sup>     | 5 <sup>6</sup>              | 7                           | 5 <sup>3</sup> <sub>8</sub> | 1                           | 4 <sup>6</sup> <sub>8</sub> | 2 <sup>3</sup> <sub>4</sub>   | 2 <sup>3</sup> <sub>4 5 6</sub> | 2 <sup>3</sup> <sub>4 5 8</sub> |
| 2 <sup>7</sup>                  | 1                  | 4                           | 5                           | 8                           | 3                           | 2                           | 9                             | 6                               |                                 |
| 2 <sup>5 6</sup>                | 3                  | 5 <sup>6</sup> <sub>9</sub> | 4 <sup>9</sup>              | 1                           | 7                           | 4 <sup>2</sup> <sub>4</sub> | 2 <sup>4 5</sup> <sub>8</sub> | 2 <sup>4 5</sup> <sub>8</sub>   |                                 |
| 5 <sup>7</sup>                  | 5 <sup>9</sup>     | 8                           | 4 <sup>9</sup>              | 6                           | 2                           | 1                           | 4 <sup>5</sup> <sub>7</sub>   | 4 <sup>5</sup> <sub>7</sub>     | 3                               |
| 5 <sup>7 8</sup>                | 2 <sup>7</sup>     | 1                           | 2 <sup>3</sup> <sub>6</sub> | 2 <sup>3</sup> <sub>8</sub> | 9                           | 4 <sup>6</sup> <sub>7</sub> | 4 <sup>6</sup> <sub>7</sub>   | 4 <sup>6</sup> <sub>7</sub>     | 2 <sup>3</sup>                  |
| 4                               | 2 <sup>7 8 9</sup> | 3 <sup>9</sup>              | 1                           | 2 <sup>3</sup> <sub>7</sub> | 3 <sup>6</sup>              | 5                           | 2 <sup>3</sup> <sub>7</sub>   | 2 <sup>3</sup>                  |                                 |
| 5 <sup>3</sup> <sub>7</sub>     | 6                  | 5 <sup>3</sup> <sub>9</sub> | 2 <sup>3</sup> <sub>4</sub> | 2 <sup>3</sup> <sub>7</sub> | 5 <sup>3</sup> <sub>7</sub> | 8                           | 1 <sup>2 3</sup> <sub>4</sub> | 1 <sup>2 3</sup> <sub>4</sub>   | 9                               |



|        |                 |                 |               |                   |            |            |          |        |   |
|--------|-----------------|-----------------|---------------|-------------------|------------|------------|----------|--------|---|
| 4<br>7 | 6               | 5<br>7 8 9      | 4 5<br>9      | 3                 | 1 4 5<br>8 | 2          | 1<br>8 9 | 7      | 9 |
| 1      | 4 5<br>7 8 9    | 3<br>5<br>7 8 9 | 2             | 4 5 6<br>4 5<br>8 | 4<br>7 8   | 3<br>8 9   | 7        | 6<br>9 | 9 |
| 2      | 4<br>8 9        | 3<br>8 9        | 4             | 6<br>9            | 7          | 1 4<br>8   | 5        | 6<br>9 | 9 |
| 9      | 1 3<br>4 7 8    | 1 3<br>6<br>7 8 | 4 3<br>6<br>7 | 1 4<br>6<br>7     | 3<br>4 7   | 2          | 5        |        |   |
| 5      | 2 3<br>7        | 2 3<br>6<br>7   | 8             | 9                 | 3<br>7     | 4          | 1        |        |   |
| 4<br>7 | 3<br>4          | 1 3<br>7        | 1 3<br>6      | 4 5 6<br>4 5 6    | 2          | 9          | 3<br>7   | 8      |   |
| 7 8    | 3 1 2<br>5<br>9 | 1 2<br>5<br>9   | 5             | 2<br>5            | 3<br>5     | 1 3<br>7 8 | 6        | 4      |   |
|        | 3 1 2<br>5      | 1 2<br>5        | 4 5<br>7      | 4 5               | 6          | 1 3<br>7 8 | 1        |        | 3 |
| 6      | 3<br>7          | 4               | 1             | 8                 | 9          | 5          | 3<br>7   | 2      |   |

|            |              |          |            |            |          |            |          |            |  |
|------------|--------------|----------|------------|------------|----------|------------|----------|------------|--|
| 2<br>4 7   | 2<br>4 7     | 2<br>9   | 2<br>5 8 9 | 6          | 5<br>8 9 | 3          | 2<br>8 9 | 1          |  |
| 8          | 5            | 2<br>9   | 1 3<br>2   | 1 3<br>9   | 6        | 7          | 4        |            |  |
| 1 3<br>9   | 1 3<br>9     | 6        | 4          | 2<br>8 9   | 7        | 5          | 2<br>8 9 | 2<br>8     |  |
| 6          | 1<br>7 9     | 5<br>7 9 | 1 5<br>8 9 | 4 5<br>8 9 | 2        | 4<br>7 8 9 | 5<br>8   | 3          |  |
| 2 3<br>5   | 2 3<br>9     | 4        | 6          | 7          | 3<br>8 9 | 1          | 2<br>8 9 | 2<br>5 8   |  |
| 1 2 3<br>5 | 1 2 3<br>9   | 8        | 1 3<br>5   | 4 5<br>9   | 1 3<br>5 | 2<br>4 7 9 | 2<br>5 6 | 2<br>5 6   |  |
| 2<br>4 5   | 2<br>4 7 8 9 | 2<br>5   | 2<br>5     | 2<br>8 9   | 6        | 1          | 3        | 2<br>5 7 8 |  |
| 2<br>5     | 6            | 3        | 2<br>5     | 1<br>8     | 5        | 2<br>7 8   | 4        | 9          |  |
| 2<br>5     | 2            | 1        | 2<br>5     | 3<br>8 9   | 4        | 2<br>7 8   | 2<br>5 6 | 2<br>5 6   |  |

|        |   |          |            |            |          |            |            |   |  |
|--------|---|----------|------------|------------|----------|------------|------------|---|--|
| 4      | 9 | 1 2<br>5 | 8          | 1 5 6<br>6 | 1 2<br>5 | 7          | 3          |   |  |
| 7      | 6 | 1 2<br>5 | 9          | 1 3<br>5   | 1 3<br>8 | 1 2<br>8   | 1 2<br>8   | 4 |  |
| 1<br>5 | 8 | 3        | 7          | 2          | 4        | 1<br>5     | 9          | 6 |  |
| 9      | 2 | 5<br>8   | 1 3<br>4   | 7          | 1 3<br>6 | 5<br>8     | 6          |   |  |
| 6      | 3 | 1<br>8   | 5          | 1<br>8     | 9        | 7          | 4          | 2 |  |
| 1<br>5 | 4 | 7        | 6          | 1 3<br>8   | 2        | 9          | 1 3<br>5 8 |   |  |
| 8      | 7 | 9        | 1 2 3<br>6 | 1 3<br>6   | 4        | 1 2 3<br>5 | 1<br>5     |   |  |
| 2 3    | 1 | 4 6<br>4 | 2 3<br>7   | 5          | 2 3<br>8 | 2 3<br>8   | 9          |   |  |
| 2 3    | 5 | 4 6<br>4 | 1 2 3<br>4 | 9          | 8        | 1 2 3<br>6 | 1 2 3<br>6 | 7 |  |

|              |              |          |            |          |          |          |          |            |   |
|--------------|--------------|----------|------------|----------|----------|----------|----------|------------|---|
| 1 3<br>5 6 8 | 1 3<br>5 6 8 | 2        | 4          | 5<br>7 8 | 6<br>7 8 | 1<br>7 8 | 9        | 1<br>7 8   | 6 |
| 1<br>5 6 8   | 7            | 5 6      | 3          | 5<br>8 9 | 6<br>8 9 | 2        | 4<br>8   | 1<br>4 6 8 | 6 |
| 9            | 6<br>8       | 4        | 7          | 2        | 1        | 3        | 6<br>7 8 | 5          |   |
| 1 3<br>5 6   | 1 3<br>5 6 9 | 8        | 6 4<br>7 9 | 3<br>7   | 2        | 5 6<br>7 | 4<br>7   | 3<br>6 7 9 |   |
| 2 3<br>6     | 2 3<br>6 9   | 3<br>6 9 | 6 4<br>7 9 | 3<br>7 8 | 5        | 6<br>7 8 | 1        | 4<br>7 8 9 |   |
| 7            | 4            | 5 6<br>9 | 1          | 3<br>8   | 3<br>8   | 5 6<br>8 | 2        | 3<br>6 8 9 |   |
| 2<br>5       | 2<br>5       | 1        | 8          | 6        | 4        | 9        | 3<br>7   | 3          |   |
| 3<br>8 6     | 3<br>8 9 7   | 3<br>6 9 | 5          | 1        | 3<br>7 9 | 4        | 6<br>8   | 2          |   |
| 4            | 3<br>6 8 9 7 | 3<br>6 9 | 2          | 3<br>7 9 | 3<br>7 9 | 1<br>8   | 6<br>5   | 1<br>8     | 6 |

|              |            |            |              |                |                |              |          |              |  |
|--------------|------------|------------|--------------|----------------|----------------|--------------|----------|--------------|--|
| 2 3<br>4     | 2 3<br>4 5 | 4 5        | 2<br>5 7 8 9 | 2<br>7 8 9     | 1              | 2<br>5 7 8 9 | 6        | 2<br>5 7 8 9 |  |
| 9            | 6          | 8          | 2<br>4 5 7   | 2<br>4 7       | 2<br>4 7       | 1 2<br>5 7   | 3        | 1 2<br>5 7   |  |
| 1<br>7       | 2<br>5     | 1<br>7     | 3            | 6              | 8 9            | 4            | 2<br>5   | 8 9          |  |
| 4 6          | 8          | 4 5 6<br>9 | 1            | 2<br>4 7 9     | 2<br>4 7 9     | 2<br>5 7 9   | 4 5      | 3            |  |
| 1 3<br>4 6   | 7          | 1<br>4 6 9 | 2<br>4 6 8 9 | 5              | 2 3<br>4 6 8 9 | 2<br>8 9     | 1 2<br>4 | 2<br>8 9     |  |
| 1 3<br>4     | 4 5<br>9   | 2          | 4<br>7 8 9   | 4<br>7 8 9     | 3<br>4 7 8 9   | 6            | 1<br>4 5 | 5<br>7 8 9   |  |
| 2<br>4 6 7 8 | 2<br>4     | 3          | 2<br>4 6 7 8 | 1 2<br>4 6 7 8 | 2<br>4 6 7 8   | 1 2<br>5     | 9        | 1 2<br>5 6   |  |
| 5            | 2<br>9 7   | 6<br>9     | 2<br>7 9     | 1 2 3<br>7 9   | 2 3<br>7 9     | 1 2 3<br>7 9 | 8        | 4            |  |
| 2<br>4 6 8   | 1          | 4<br>6 9   | 2<br>4 6 8 9 | 5              | 2 3<br>8 9     | 2 3<br>7     | 7        | 2<br>6       |  |

|          |          |     |            |                |              |              |            |              |  |
|----------|----------|-----|------------|----------------|--------------|--------------|------------|--------------|--|
| 4 6<br>8 | 9        | 1   | 2 3<br>5   | 4 5 6<br>4 5 6 | 2 3<br>4 5 6 | 2<br>8 7 8   | 2<br>4 6 8 | 2<br>4 6 8   |  |
| 4 6<br>8 | 7        | 3   | 2<br>9     | 4<br>6 9       | 2<br>4 6     | 5            | 1          | 4<br>6 8     |  |
| 4 6      | 5        | 2   | 7          | 1              | 8            | 6<br>9       | 3          | 4<br>6 9     |  |
| 1        | 2 3<br>8 | 5   | 4          | 6<br>7         | 6            | 2 3<br>8     | 9          | 2<br>8       |  |
| 7        | 2 3<br>8 | 6   | 2<br>5 8 9 | 5<br>8 9       | 2<br>5       | 1 2 3<br>8   | 4          | 1 2<br>5 8   |  |
| 9        | 2<br>8   | 4   | 2<br>5 8   | 3              | 1            | 2<br>8 6 7 8 | 5<br>7 8   | 2<br>5 6 7 8 |  |
| 5        | 6        | 8 9 | 1<br>8     | 4<br>7         | 4<br>7       | 1<br>9       | 2          | 3            |  |
| 2        | 4        | 8 9 | 1 3<br>5 8 | 5<br>8         | 3<br>5       | 7            | 6          | 1<br>9       |  |
| 3        | 1        | 7   | 6          | 2              | 9            | 4            | 5<br>8     | 5<br>8       |  |

|                            |                   |                              |                              |                          |                            |                            |                              |                              |
|----------------------------|-------------------|------------------------------|------------------------------|--------------------------|----------------------------|----------------------------|------------------------------|------------------------------|
| <sup>3</sup><br>5<br>9     | 4                 | 7                            | <sup>2 3</sup><br>5<br>9     | 8                        | <sup>2</sup><br>9          | <sup>2 3</sup><br>9        | 6                            | 1                            |
| <sup>1 3</sup><br>5<br>8 9 | 6                 | <sup>1 2 3</sup><br>5<br>8 9 | <sup>2 3</sup><br>4 5<br>7 9 | <sup>3</sup><br>5<br>7 9 | <sup>1 2</sup><br>4<br>7 9 | <sup>2 3</sup><br>8<br>9   | <sup>2 3</sup><br>4 5<br>8 9 |                              |
| <sup>1 3</sup><br>5<br>8 9 | <sup>3</sup><br>5 | <sup>1 2 3</sup><br>5<br>8 9 | 6                            | <sup>3</sup><br>5<br>9   | <sup>1 2</sup><br>4<br>9   |                            | 7                            | <sup>2 3</sup><br>4 5<br>8 9 |
| 6                          | 2                 | <sup>4</sup><br>8 9          | <sup>4</sup><br>8 9          | 1                        | 3                          | 5                          | 7                            | <sup>4</sup><br>8 9          |
| <sup>4</sup><br>7 8 9      | <sup>3</sup><br>7 | <sup>3</sup><br>4<br>8 9     | <sup>2</sup><br>7 8 9        |                          | 5                          | <sup>1 2 3</sup><br>8<br>9 | <sup>1 2 3</sup><br>8<br>9   | 6                            |
| <sup>4 5</sup><br>7 8 9    | 1                 | <sup>4 5</sup><br>8 9        | <sup>4</sup><br>7 8 9        | 6                        | <sup>4</sup><br>7 8 9      | <sup>4</sup><br>8 9        | <sup>4</sup><br>8 9          |                              |
| 2                          | 8                 | <sup>5 6</sup><br>7 9        | <sup>5</sup><br>7 9          | 4                        | <sup>6</sup><br>7 9        | <sup>1 3</sup><br>5        | <sup>3</sup><br>5            |                              |
| <sup>5</sup><br>7          | <sup>3</sup><br>9 | <sup>5 6</sup><br>7 9        | 1                            | <sup>5</sup><br>7 8      | <sup>6</sup><br>7 8        | <sup>2 3</sup><br>8        | 4                            | <sup>2 3</sup><br>5<br>7 8   |
| <sup>1</sup><br>4          | <sup>3</sup><br>5 | <sup>1</sup><br>4            | <sup>3</sup><br>5            | 2                        |                            | 6                          | 9                            | <sup>3</sup><br>5<br>7 8     |

|                       |                            |                          |                        |                          |                          |                              |                              |                            |
|-----------------------|----------------------------|--------------------------|------------------------|--------------------------|--------------------------|------------------------------|------------------------------|----------------------------|
| <sup>2 3</sup><br>8   | 4                          | <sup>2</sup><br>7 8 9    | <sup>3</sup><br>6<br>9 | 1                        | <sup>3</sup><br>5 6      | <sup>2 3</sup><br>7 8 9      | <sup>2 3</sup><br>5<br>7 8 9 | 5                          |
| 5                     | <sup>2 3</sup><br>7 9      | <sup>2</sup><br>7 9      | 4                      | <sup>7</sup><br>9        | 8                        | <sup>1 2 3</sup><br>6<br>7 9 | <sup>2 3</sup><br>6<br>7 9   | <sup>1</sup><br>6          |
| <sup>3</sup><br>8     | 6                          | 1                        | 2                      | <sup>5</sup><br>7 9      | <sup>3</sup><br>5        | <sup>3</sup><br>4            | <sup>3</sup><br>4 5<br>7 8 9 | <sup>4 5</sup><br>7 8 9    |
| <sup>2</sup><br>8     | <sup>2</sup><br>5<br>8 9   | <sup>2</sup><br>5<br>8 9 | 1                      | <sup>4 5</sup><br>8 9    | 7                        | <sup>4</sup><br>6            | <sup>2</sup><br>6<br>9       | 3                          |
| <sup>1 2</sup><br>8 6 | <sup>1 2</sup><br>7 8 9    | <sup>2</sup><br>7 8 9    | <sup>3</sup><br>6<br>9 | <sup>2</sup><br>4<br>8 9 | <sup>2 3</sup><br>4<br>6 | 5                            | <sup>2</sup><br>6<br>7 9     | <sup>4</sup><br>6<br>7 9   |
| 4                     | <sup>2</sup><br>7 9        | 3                        | <sup>6</sup><br>9      | <sup>2</sup><br>5<br>9   | <sup>2</sup><br>5 6      | 8                            | 1                            | <sup>6</sup><br>7 9        |
| 9                     | <sup>1</sup><br>5<br>8     | <sup>3</sup><br>4 5<br>8 | 7                      | <sup>2</sup><br>4        | <sup>1 2</sup><br>4      | <sup>1</sup><br>4            | <sup>3</sup><br>4 5<br>6 8   | <sup>1</sup><br>4 5<br>6 8 |
| 7                     | <sup>1</sup><br>5<br>8     | 6                        | 5                      | 3                        | <sup>1</sup><br>4        | 9                            | <sup>4 5</sup><br>8          | 2                          |
| <sup>1 2 3</sup><br>8 | <sup>1 2 3</sup><br>5<br>8 | <sup>2</sup><br>4 5<br>8 | 5                      | 6                        | 9                        | 7                            | <sup>3</sup><br>4 5<br>8     | <sup>1</sup><br>4 5<br>8   |

|                          |                          |                              |                            |                          |                            |                       |                            |                   |
|--------------------------|--------------------------|------------------------------|----------------------------|--------------------------|----------------------------|-----------------------|----------------------------|-------------------|
| 6                        | <sup>4</sup><br>7 8      | <sup>4</sup><br>7 8          | <sup>7 8</sup>             | 9                        | 3                          | 5                     | 1                          | 2                 |
| <sup>1 3</sup><br>5<br>9 | <sup>1</sup><br>5        | <sup>3</sup><br>5            | <sup>3</sup><br>5          | <sup>1 2</sup><br>4<br>7 | <sup>1 2</sup><br>6<br>7   | <sup>3</sup><br>4 5 6 | <sup>3</sup><br>9          | 8                 |
| 2                        | <sup>1</sup><br>5        | <sup>3</sup><br>8            | <sup>3</sup><br>5 6<br>8 9 | <sup>1</sup><br>5        | <sup>6</sup><br>8          | <sup>5 6</sup><br>8   | <sup>6</sup><br>9          | 4 7               |
| <sup>5</sup><br>9        | <sup>2</sup><br>4 5<br>7 | <sup>2</sup><br>4 5<br>7 9   | <sup>1 2 3</sup><br>7      | <sup>3</sup><br>7        | <sup>1 2</sup><br>7        | 8                     | 6                          | <sup>4 5</sup>    |
| <sup>1 3</sup><br>5      | 6                        | <sup>2</sup><br>7            | 4                          | <sup>7 8</sup>           | <sup>2</sup><br>7 8        | <sup>1 3</sup><br>5   | <sup>3</sup><br>9          |                   |
| 8                        | <sup>1</sup><br>4        | <sup>3</sup><br>4            | 6                          | 5                        | 9                          | 7                     | 2                          | <sup>1</sup><br>4 |
| 4                        | <sup>1</sup><br>5<br>8   | <sup>3</sup><br>5<br>8       | <sup>3</sup><br>5<br>7 8 9 | 2                        | <sup>5</sup><br>7 8        | <sup>1</sup><br>9     | <sup>3</sup><br>5<br>7 8 9 | 6                 |
| 7                        | 9                        | <sup>1 2 3</sup><br>5 6<br>8 | <sup>3</sup><br>5<br>8     | <sup>4</sup><br>8        | <sup>3</sup><br>4 5 6<br>8 | <sup>2</sup><br>4     | <sup>3</sup><br>5<br>8     | <sup>1</sup><br>5 |
| <sup>3</sup><br>5        | <sup>2</sup><br>8        | <sup>2</sup><br>8            | <sup>6</sup><br>7 8 9      | 1                        | <sup>4</sup><br>7 8        | <sup>6</sup><br>4     | <sup>2</sup><br>7 8 9      | <sup>3</sup><br>5 |

|                   |                        |                   |                        |                   |   |                     |                   |                          |
|-------------------|------------------------|-------------------|------------------------|-------------------|---|---------------------|-------------------|--------------------------|
| <sup>1</sup><br>5 | 3                      | 6                 | 2                      | <sup>4</sup><br>7 | 9 | <sup>5</sup><br>7   | 8                 | <sup>1</sup><br>4<br>7   |
| 9                 | <sup>4</sup><br>2      | <sup>4 5</sup>    | <sup>6</sup><br>7      | 8                 | 1 | <sup>2</sup><br>5 6 | 3                 | <sup>2</sup><br>4<br>6   |
| <sup>1</sup><br>8 | <sup>2</sup><br>4<br>8 | 7                 | <sup>4</sup><br>6      | 3                 | 5 | <sup>2</sup><br>6   | 9                 | <sup>1 2</sup><br>4<br>6 |
| <sup>6</sup><br>7 | 1                      | <sup>2</sup><br>5 | <sup>5</sup><br>7      | 9                 | 8 | <sup>2 3</sup><br>6 | 4                 | <sup>2 3</sup><br>6      |
| <sup>6</sup><br>7 | 9                      | <sup>4</sup><br>2 | <sup>1</sup><br>4<br>7 | 3                 | 8 | 5                   | <sup>2</sup><br>6 |                          |
| <sup>5</sup><br>8 | <sup>4</sup><br>8      | 3                 | <sup>4 5</sup>         | 6                 | 2 | 1                   | 7                 | 9                        |
| 3                 | 5                      | 1                 | 9                      | 2                 | 7 | 4                   | 6                 | 8                        |
| 4                 | 7                      | 8                 | 3                      | 1                 | 6 | 9                   | 2                 | 5                        |
| 2                 | 6                      | 9                 | 8                      | 5                 | 4 | <sup>3</sup><br>7   | 1                 | <sup>3</sup><br>7        |

|                            |                        |                       |                            |                          |                            |                          |                          |                          |
|----------------------------|------------------------|-----------------------|----------------------------|--------------------------|----------------------------|--------------------------|--------------------------|--------------------------|
| <sup>1 2</sup><br>6        | 3                      | <sup>2</sup><br>7     | <sup>5 6</sup><br>7        | <sup>4</sup><br>6        | 9                          | <sup>1</sup><br>4 5<br>7 | 8                        | <sup>1 2</sup><br>4<br>6 |
| 8                          | <sup>2</sup><br>6<br>9 | 5                     | <sup>3</sup><br>7          | <sup>2 3</sup><br>4<br>6 | 1                          | <sup>4</sup><br>7 9      | <sup>2 3</sup><br>6<br>9 | <sup>2</sup><br>4<br>6   |
| <sup>1 2</sup><br>6<br>9   | 4                      | <sup>2</sup><br>7 9   | <sup>5 6</sup><br>7        | 8                        | <sup>2 3</sup><br>5 6<br>7 | <sup>1</sup><br>7 9      | <sup>2 3</sup><br>6<br>9 | <sup>1 2</sup><br>6<br>9 |
| <sup>5</sup><br>9          | <sup>1</sup><br>5<br>9 | 4                     | <sup>2</sup><br>9          | <sup>3</sup><br>5        | 6                          | 7                        | 8                        |                          |
| <sup>2 3</sup><br>5 6<br>9 | <sup>2</sup><br>5<br>9 | <sup>2 3</sup><br>8 9 | <sup>3</sup><br>5 6<br>8 9 | 7                        | <sup>3</sup><br>5 6<br>8   | <sup>1</sup><br>9        | 4                        | <sup>1 2</sup><br>9      |
| 7                          | <sup>1 2</sup><br>8 9  | <sup>2</sup><br>8 9   | 4                          | <sup>1</sup><br>6<br>9   | <sup>6</sup><br>8          | 3                        | <sup>2</sup><br>9        | 5                        |
| <sup>2 3</sup><br>4 5<br>9 | <sup>2</sup><br>5<br>9 | 1                     | <sup>3</sup><br>7          | <sup>2 3</sup><br>6<br>9 | <sup>2 3</sup><br>6<br>9   | 8                        | <sup>6</sup><br>9 7      |                          |
| <sup>3</sup><br>9          | 7                      | <sup>3</sup><br>8 9   | <sup>3</sup><br>8 9        | 5                        | 4                          | 2                        | 1                        | <sup>6</sup><br>9        |
| <sup>2</sup><br>4          | <sup>2</sup><br>8 9    | 6                     | 1                          | <sup>2</sup><br>9 7 8    | <sup>2</sup><br>4 7        | 5                        | 3                        |                          |

|                     |                   |                        |                        |                          |                     |                       |                            |                          |
|---------------------|-------------------|------------------------|------------------------|--------------------------|---------------------|-----------------------|----------------------------|--------------------------|
| <sup>1 3</sup><br>7 | <sup>3</sup><br>7 | <sup>1</sup><br>5<br>7 | <sup>3</sup><br>4<br>9 | 6                        | <sup>5</sup><br>7   | <sup>2</sup><br>9     | <sup>2</sup><br>4<br>9     | 8                        |
| 8                   | 6                 | 2                      | 1                      | <sup>4</sup><br>9        | 3                   | <sup>7</sup><br>9     | <sup>4 5</sup><br>7 9      | <sup>4 5</sup><br>7 9    |
| 4                   | 9                 | <sup>5</sup><br>7      | <sup>5</sup><br>7 8    | 2                        | 3                   | 1                     | 6                          |                          |
| <sup>1</sup><br>7   | 5                 | 6                      | <sup>7</sup><br>9      | 3                        | 4                   | <sup>1 2</sup><br>8 9 | <sup>2</sup><br>8 9        | <sup>1 2</sup><br>9      |
| <sup>1</sup><br>7   | <sup>3</sup><br>2 | <sup>1</sup><br>7      | 6                      | <sup>7</sup><br>9        | 8                   | 5                     | <sup>4</sup><br>9          | <sup>1</sup><br>4<br>9   |
| 9                   | 4                 | 8                      | 5                      | 2                        | 1                   | <sup>6</sup><br>7     | <sup>6</sup><br>7          | 3                        |
| 6                   | <sup>3</sup><br>7 | <sup>3</sup><br>7      | 2                      | <sup>1</sup><br>5<br>8   | 9                   | 4                     | <sup>5</sup><br>8          | <sup>1</sup><br>5        |
| 2                   | 8                 | <sup>4</sup><br>9      | 3                      | <sup>1</sup><br>4 5<br>7 | <sup>5 6</sup><br>7 | <sup>1</sup><br>7     | <sup>6</sup><br>5 6<br>7 9 | <sup>1</sup><br>5<br>7 9 |
| 5                   | 1                 | <sup>4</sup><br>9      | <sup>4</sup><br>7 8    | <sup>4</sup><br>7 8      | <sup>6</sup><br>7   | 3                     | <sup>2</sup><br>7 8 9      | <sup>2</sup><br>7 9      |

|          |              |            |          |              |              |          |              |                  |
|----------|--------------|------------|----------|--------------|--------------|----------|--------------|------------------|
| 1<br>8 9 | 1 3<br>5 9   | 1 3<br>8   | 2        | 1 3<br>4 5 9 | 3<br>4 5 9   | 7        | 5 3<br>8     | 6                |
| 7 8 9    | 2 3<br>5     | 2 3<br>7 8 | 5        | 5 3<br>9     | 6            | 1        | 4            | 5 3<br>8 9       |
| 4        | 1 3<br>5 6 9 | 1 3<br>6   | 1<br>5   | 1 3<br>5 9   | 8            | 5<br>9   | 2            | 5 3<br>9         |
| 3        | 8            | 1 2<br>4 7 | 4 5      | 4 5          | 4 5 7        | 9        | 1 2<br>4 5 7 |                  |
| 7        | 6 4<br>9     | 2<br>6 9   | 5        | 3            | 2<br>4 8 9   | 1        | 2<br>4 8     | 6<br>4 7 8       |
| 1        | 1 2<br>4     | 1 2<br>4   | 4 5<br>8 | 6            | 4 5<br>7 9   | 4 5<br>8 | 1 3<br>5 8   | 1 2 3<br>4 5 7 8 |
| 5        | 1<br>4       | 1<br>6 4   | 6<br>8   | 9            | 7            | 2        | 3            | 1<br>6 4 8       |
| 2        | 1 3<br>4 6   | 1 3<br>4 6 | 1 3<br>8 | 4 5 6<br>8   | 4 5<br>8     | 4 5      | 4 5 6<br>8 9 | 7<br>4 5 8 9     |
| 1<br>8   | 6            | 7          | 9        | 1 4 5 6<br>8 | 1 3<br>4 5 8 | 3<br>4 5 | 2<br>4 5 6 8 | 1 2<br>5 6 4 5 8 |

|        |            |            |              |            |            |              |              |              |
|--------|------------|------------|--------------|------------|------------|--------------|--------------|--------------|
| 2<br>7 | 1 3<br>6 7 | 4          | 1 2<br>6     | 9          | 8          | 1 2 3<br>6 7 | 1 5 6<br>7   | 1 2<br>5 6 7 |
| 5      | 1<br>7     | 6          | 9            | 1 2<br>4 6 | 3          | 1 2<br>4     | 1 2<br>6 7 8 | 1 2<br>6 7 8 |
| 2<br>8 | 1 3<br>6   | 1 3<br>8   | 7            | 1 2<br>6   | 5          | 1 2 3<br>6   | 4            | 9            |
| 4<br>7 | 6          | 4 5 6<br>7 | 1<br>5 6     | 3          | 8          | 1<br>4 7     | 9            | 2<br>4 6 7   |
| 3      | 9          | 1<br>7     | 6            | 5          | 1 2<br>4 7 | 1 2<br>6 4 7 | 8            | 1<br>6 4 7   |
| 4<br>7 | 6          | 8          | 2            | 1<br>4 6   | 1<br>4 6   | 9            | 5            | 3<br>4 6 7   |
| 9      | 4 5<br>7   | 5<br>7 8   | 1 2<br>4 8   | 1 2<br>4 7 | 6          | 1 2<br>4     | 1<br>5 8     | 3            |
| 4<br>8 | 6          | 2          | 6<br>8 9     | 5          | 3          | 7            | 1<br>6 8 9   | 1<br>6 8     |
| 1      | 4 5 6<br>7 | 3<br>7 8   | 3<br>5 6 8 9 | 2<br>4 8 9 | 2<br>7     | 2<br>4 7     | 4<br>6 8 9   | 2<br>5 6 8   |

|            |          |          |              |              |              |        |              |            |          |          |
|------------|----------|----------|--------------|--------------|--------------|--------|--------------|------------|----------|----------|
| 1<br>4     | 6        | 7        | 6 9          | 3            | 1 4 5<br>7 9 | 8      | 1<br>4 7     | 2          | 4 5<br>7 | 4 5<br>7 |
| 1 2<br>4   | 2<br>7 9 | 1 2      | 1 3<br>4 5 7 | 1<br>4 5 7   | 1 3<br>4 5 7 | 6      | 8            | 4 5<br>7   |          |          |
| 4          | 8        | 7 8      | 5            | 6            | 4<br>7       | 2      | 9            | 3          | 1        |          |
| 1 2 3<br>5 | 2 3<br>5 | 1 2<br>6 | 1 4 5<br>7   | 1 2<br>4 5 6 | 9            | 8      | 1 2<br>5 6 7 | 2<br>5 6   |          |          |
| 1 2<br>5 8 | 2<br>5 8 | 7        | 1<br>5       | 3            | 1<br>6       | 4      | 1 2<br>5 6 9 | 2<br>5 6 9 |          |          |
| 9          | 4        | 1 2<br>6 | 8            | 2 5 6<br>7   | 1<br>6 7     | 1      | 1 2<br>5 6 7 | 3          |          |          |
| 5 6        | 5 6      | 4        | 2            | 1<br>7       | 8            | 3      | 1<br>7 9 7 9 |            |          |          |
| 7          | 1        | 8        | 4<br>9       | 3<br>4 6 9   | 4<br>6 9     | 5      | 2<br>4 6 4 6 |            |          |          |
| 2 3        | 2 3      | 9        | 1<br>4 7     | 1<br>4 6 7   | 5            | 1<br>7 | 4 6          | 8          |          |          |

|          |              |              |              |            |          |              |            |              |              |
|----------|--------------|--------------|--------------|------------|----------|--------------|------------|--------------|--------------|
| 1<br>9   | 1 2<br>5 9   | 3            | 7            | 5 9        | 8 9      | 5<br>7 8 9   | 6          | 2<br>4 5 7 8 | 1 2<br>4 5 7 |
| 8        | 1<br>7 9     | 5 6<br>7 9   | 1<br>5 6 7 9 | 5 6<br>7 9 | 2        | 4            | 1<br>5 7 9 | 3            | 1<br>5 7     |
|          | 6<br>9       | 2<br>5 6 9   | 4            | 3          | 6<br>8 9 | 1            | 2<br>5 7 8 | 2<br>5 7     | 2<br>5 7     |
| 2        | 3            | 1<br>5 6     | 8            | 1<br>6 7   | 5        | 4            | 5 6<br>7   | 9            |              |
| 1<br>6 9 | 4            | 1<br>5 6 7 9 | 1<br>5 6 9   | 3          | 5<br>7 9 | 1 2<br>5 6 7 | 2<br>5 6 7 | 8            |              |
| 7        | 1<br>5 6 8 9 | 1<br>5 6 8 9 | 1<br>4 5 6 9 | 1<br>4 6 9 | 2        | 3            | 5 6<br>7   | 1<br>5 6     |              |
| 4        | 3 1<br>7     | 1 2<br>7     | 1 2<br>4     | 5          | 6        | 8            | 9          | 2 3<br>4 7   |              |
| 4        | 3            | 6<br>8 9     | 2<br>8 9     | 4          | 9        | 7            | 2<br>5 8 9 | 1            | 2 3<br>4 5 6 |
| 5        | 1<br>7 8 9   | 1 2<br>7 8 9 | 1 2<br>6 4 9 | 1<br>4 8 9 | 3        | 2<br>7       | 4<br>6 7   | 2<br>4 7     | 2<br>6 7     |

|          |          |            |              |          |            |          |            |          |
|----------|----------|------------|--------------|----------|------------|----------|------------|----------|
| 4<br>9   | 3        | 6          | 1            | 4 5<br>7 | 7 8 9      | 5<br>8 9 | 2          | 4 5<br>8 |
| 8        | 4 5<br>7 | 2<br>5 9   | 2 3<br>5     | 6        | 2 3<br>9   | 5<br>9   | 4 5<br>8   | 1        |
| 1<br>4   | 1<br>4 5 | 1 2<br>5 9 | 2 3<br>5     | 3<br>4 5 | 2 3<br>8 9 | 6        | 4 5<br>8   | 7        |
| 1<br>6   | 1<br>6   | 1 3        | 9            | 8        | 5          | 4        | 7          | 2        |
| 7        | 9        | 5<br>8     | 4            | 2        | 1          | 3        | 5<br>8     | 6        |
| 2        | 5<br>8   | 4          | 3<br>6 7     | 3<br>7   | 3<br>7     | 5<br>8   | 1          | 9        |
| 4<br>6 9 | 2        | 3<br>8 9   | 5 6          | 1        | 3<br>6     | 7        | 4 5<br>8 9 | 4 5<br>8 |
| 5        | 1<br>7   | 1<br>7     | 8            | 9        | 4          | 2        | 6          | 3        |
| 4<br>6 9 | 4<br>8   | 6<br>8 9   | 2 3<br>5 6 7 | 3<br>5 7 | 2 3<br>6 7 | 1        | 4 5<br>9   | 4 5<br>8 |

|                |        |                |          |              |              |            |            |          |
|----------------|--------|----------------|----------|--------------|--------------|------------|------------|----------|
| 1<br>9         | 3      | 1<br>9         | 6        | 4<br>7       | 8            | 2<br>4 7   | 2<br>4 7   | 5        |
| 8              | 4      | 7              | 2        | 5<br>9       | 5<br>9       | 6          | 3          | 1        |
| 2<br>5         | 2<br>6 | 2<br>5 6       | 3<br>7   | 1            | 4<br>7       | 8          | 9          | 4<br>7   |
| 2 3<br>4 5 9   | 7      | 2 3<br>4 5 9   | 5<br>9   | 3<br>4 5 6 9 | 3<br>4 5 6 9 | 1          | 8          | 2<br>4 9 |
| 1<br>4 5 9     | 5<br>9 | 1<br>4 5 9     | 8        | 4 5<br>7 9   | 2            | 3          | 6          | 4<br>7 9 |
| 6              | 8      | 4<br>9         | 1        | 3<br>4 7 9   | 3<br>4 7 9   | 5          | 2<br>4 7 9 |          |
| 2 3<br>7 9     | 2<br>6 | 2 3<br>6 9     | 4        | 3<br>7 8 9   | 1            | 5          | 2<br>7 8   | 3        |
| 4 5<br>7 9     | 5<br>9 | 8              | 5<br>7 9 | 2<br>7 9     | 3<br>7 9     | 4<br>7 9   | 1          | 6        |
| 2 3<br>4 5 7 9 | 1      | 2 3<br>4 5 6 9 | 5<br>7 9 | 3<br>5 6 7 9 | 3<br>5 6 7 9 | 2<br>4 7 9 | 2<br>4 7   | 3<br>8   |

|                           |                           |                           |                           |                               |                               |                               |                           |                               |                               |                             |
|---------------------------|---------------------------|---------------------------|---------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------|-------------------------------|-------------------------------|-----------------------------|
| 5                         | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | 2                             | <sup>1</sup> <sub>7</sub>     | <sup>3</sup> <sub>8 9</sub>   | 6                         | <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>7 9</sub> |
| <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>6</sub> | 7                         | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>4</sub>     | <sup>1</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>8 9</sub>   | <sup>3</sup> <sub>4</sub> | <sup>1</sup> <sub>8 9</sub>   | <sup>6</sup> <sub>8 9</sub>   | 2 5                         |
| 9                         | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>6</sub> | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>7 8</sub>   | <sup>1</sup> <sub>5</sub>     | <sup>1</sup> <sub>7 8</sub>   | <sup>5</sup> <sub>8</sub> | 3                             | 4                             | <sup>1</sup> <sub>7</sub>   |
| <sup>2</sup> <sub>8</sub> | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>4</sub> | <sup>6</sup> <sub>8</sub> | 7                             | <sup>4</sup> <sub>5</sub>     | <sup>3</sup> <sub>8 9</sub>   | <sup>2</sup> <sub>5</sub> | 1                             | <sup>6</sup> <sub>8 9</sub>   | <sup>5</sup> <sub>6</sub>   |
| <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>4</sub>     | <sup>3</sup> <sub>6</sub>     | <sup>2</sup> <sub>4</sub>     | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>7 8 9</sub> | <sup>1</sup> <sub>5</sub>     | <sup>1</sup> <sub>4</sub>   |
| <sup>1</sup> <sub>8</sub> | <sup>6</sup> <sub>4</sub> | 5                         | <sup>1</sup> <sub>8</sub> | <sup>4</sup> <sub>7 8 9</sub> | <sup>6</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>7 8 9</sub> | <sup>4</sup> <sub>8</sub> | 2                             | <sup>1</sup> <sub>7 8 9</sub> | 3                           |
| <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>6</sub> | 9                         | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>6</sub>     | <sup>1</sup> <sub>8</sub>     | <sup>4</sup> <sub>7</sub>     | 4 7                       | 5                             | 3                             | <sup>1</sup> <sub>6</sub>   |
| 4                         | 3                         | <sup>1</sup> <sub>6</sub> | <sup>5</sup> <sub>1</sub> | <sup>2</sup> <sub>5 6</sub>   | <sup>2</sup> <sub>5</sub>     | <sup>7</sup> <sub>9</sub>     | <sup>7</sup> <sub>9</sub> | <sup>8</sup> <sub>7 9</sub>   |                               |                             |
| 7                         | <sup>1</sup> <sub>8</sub> | <sup>6</sup> <sub>5</sub> | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>6</sub>     | <sup>1</sup> <sub>8</sub>     | <sup>3</sup> <sub>6</sub>     | 9                         | 4                             | <sup>1</sup> <sub>6</sub>     | 2                           |

|                             |                           |                           |                             |                           |                               |                           |                           |                           |                             |                             |
|-----------------------------|---------------------------|---------------------------|-----------------------------|---------------------------|-------------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>4</sub>   | <sup>2</sup> <sub>7</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub>   | 8                         | <sup>3</sup> <sub>7</sub>     | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub> | 5                         | <sup>1</sup> <sub>3</sub>   | <sup>3</sup> <sub>6</sub>   |
| 9                           | 3                         | <sup>1</sup> <sub>6</sub> | <sup>2</sup> <sub>4</sub>   | 5                         | <sup>2</sup> <sub>4</sub>     | 7                         | 8                         | <sup>1</sup> <sub>6</sub> |                             |                             |
| 8                           | <sup>4</sup> <sub>7</sub> | 5                         | 6                           | <sup>3</sup> <sub>7</sub> | 1                             | <sup>4</sup> <sub>3</sub> | 9                         | 2                         |                             |                             |
| 6                           | 9                         | 8                         | <sup>1</sup> <sub>2 3</sub> | 4                         | <sup>2</sup> <sub>3</sub>     | 5                         | <sup>1</sup> <sub>3</sub> | 7                         |                             |                             |
| <sup>1</sup> <sub>2 3</sub> | <sup>1</sup> <sub>7</sub> | <sup>2</sup> <sub>7</sub> | <sup>1</sup> <sub>3</sub>   | 5                         | 6                             | <sup>5</sup> <sub>8</sub> | <sup>1</sup> <sub>3</sub> | 4                         | 9                           |                             |
| 5                           | <sup>1</sup> <sub>4</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>7</sub>   | 9                         | <sup>3</sup> <sub>7</sub>     | 2                         | 6                         | 8                         |                             |                             |
| 4                           | 8                         | <sup>1</sup> <sub>3</sub> | <sup>3</sup> <sub>5</sub>   | 2                         | <sup>3</sup> <sub>5 6 9</sub> | <sup>1</sup> <sub>3</sub> | <sup>3</sup> <sub>6</sub> | 7                         | <sup>1</sup> <sub>5 6</sub> | <sup>3</sup> <sub>6</sub>   |
| <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>6</sub> | 9                         | <sup>4</sup> <sub>5</sub>   | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>3</sub>     | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>7</sub> | 8                         | 2                           | <sup>1</sup> <sub>4 5</sub> |
| <sup>1</sup> <sub>7</sub>   | <sup>3</sup> <sub>5</sub> | 2                         | <sup>4</sup> <sub>8</sub>   | <sup>1</sup> <sub>3</sub> | <sup>4</sup> <sub>6</sub>     | 9                         | <sup>1</sup> <sub>3</sub> | <sup>4</sup> <sub>6</sub> |                             |                             |

|                           |                           |                           |                           |                           |                           |                           |                           |                             |                             |                             |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|
| <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>3</sup> <sub>8</sub> | 2                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>7 8</sub> | <sup>3</sup> <sub>5 6</sub> | <sup>3</sup> <sub>7 8</sub> |
| <sup>2</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>2</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>8</sub> | <sup>7</sup> <sub>9</sub> | 7                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>8</sub>   | <sup>1</sup> <sub>5 6</sub> | 1                           |
| 7                         | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>8</sub> | <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | 3                         | <sup>1</sup> <sub>4</sub> | <sup>6</sup> <sub>4 5</sub> | <sup>2</sup> <sub>5 6</sub> | <sup>2</sup> <sub>8</sub>   |
| 8                         | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>8</sub> | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>9</sub> | <sup>7</sup> <sub>8</sub> | 7                         | <sup>2</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub>   | <sup>1</sup> <sub>4 5</sub> | <sup>2</sup> <sub>9</sub>   |
| <sup>4</sup> <sub>5</sub> | 2                         | 7                         | 8                         | 9                         | 1                         | 6                         | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>5</sub>   | <sup>3</sup> <sub>5</sub>   |                             |
| <sup>4</sup> <sub>5</sub> | 1                         | 3                         | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>4</sub> | 6                         | <sup>2</sup> <sub>7</sub> | <sup>7</sup> <sub>8</sub> | <sup>7</sup> <sub>8 9</sub> |                             |                             |
| 3                         | 9                         | <sup>1</sup> <sub>6</sub> | <sup>1</sup> <sub>6</sub> | 5                         | 7                         | 8                         | 2                         | 4                           |                             |                             |
| <sup>2</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>2</sup> <sub>7</sub> | <sup>4</sup> <sub>5</sub> | <sup>6</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> | 8                         | 9                         | 1                           | <sup>3</sup> <sub>5 6</sub> | <sup>3</sup> <sub>7</sub>   |
| <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>8</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>6</sub> | <sup>3</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | <sup>3</sup> <sub>7</sub>   | <sup>3</sup> <sub>5 6</sub> | <sup>3</sup> <sub>7</sub>   |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>1</sup> <sub>7</sub> | <sup>2</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>5</sub> | <sup>2</sup> <sub>6</sub> | 4                         | <sup>2</sup> <sub>7</sub> | <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> |
| <sup>2</sup> <sub>7</sub> | <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>6</sub> | 4                         | 1                         | 5                         | <sup>2</sup> <sub>7</sub> | <sup>3</sup> <sub>8</sub> | 9                         | <sup>2</sup> <sub>7</sub> |                           |
| 9                         | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>7</sub> | <sup>5</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | 6                         | <sup>2</sup> <sub>5</sub> | <sup>3</sup> <sub>7</sub> | 1                         |                           |                           |
| 8                         | 2                         | 6                         | 9                         | 7                         | 5                         | 1                         | 4                         | 3                         |                           |                           |
| <sup>1</sup> <sub>7</sub> | <sup>3</sup> <sub>5</sub> | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>8</sub> | <sup>1</sup> <sub>5</sub> | 9                         | <sup>2</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> | <sup>2</sup> <sub>5</sub> | <sup>3</sup> <sub>7</sub> |
| 4                         | <sup>5</sup> <sub>9</sub> | <sup>3</sup> <sub>7</sub> | <sup>1</sup> <sub>6</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | 8                         | <sup>5</sup> <sub>7</sub> |                           |
| <sup>1</sup> <sub>5</sub> | 7                         | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | <sup>5</sup> <sub>6</sub> | <sup>1</sup> <sub>4</sub> | 4                         | 2                         | <sup>8</sup> <sub>9</sub> |                           |                           |
| 6                         | 4                         | <sup>1</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | <sup>5</sup> <sub>6</sub> | <sup>2</sup> <sub>3</sub> | 7                         | <sup>1</sup> <sub>5</sub> | <sup>8</sup> <sub>9</sub> | <sup>3</sup> <sub>6</sub> | <sup>3</sup> <sub>7</sub> |
| <sup>1</sup> <sub>5</sub> | <sup>8</sup> <sub>9</sub> | 2                         | <sup>4</sup> <sub>7</sub> | <sup>8</sup> <sub>9</sub> | <sup>4</sup> <sub>7</sub> | 3                         | <sup>1</sup> <sub>5</sub> | <sup>6</sup> <sub>7</sub> | <sup>3</sup> <sub>4</sub> | <sup>3</sup> <sub>6</sub> |

|                           |                           |                           |                           |                           |                           |                           |   |                           |  |  |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|---------------------------|--|--|
| 9                         | 1                         | 5                         | 7                         | 3                         | 8                         | <sup>2</sup> <sub>4</sub> | 6 | <sup>2</sup> <sub>4</sub> |  |  |
| <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>4</sub> | 6                         | 5                         | 9                         | 1                         | 7                         | 3 | 8                         |  |  |
| 3                         | 7                         | 8                         | 4                         | 2                         | 6                         | 9                         | 5 | 1                         |  |  |
| <sup>1</sup> <sub>2</sub> | <sup>5</sup> <sub>6</sub> | 9                         | <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>6</sup> <sub>8</sub> | 4 | 7                         |  |  |
| 8                         | 3                         | <sup>2</sup> <sub>4</sub> | 6                         | 7                         | <sup>2</sup> <sub>4</sub> | 1                         | 9 | 5                         |  |  |
| <sup>1</sup> <sub>4</sub> | <sup>5</sup> <sub>6</sub> | 7                         | <sup>8</sup> <sub>9</sub> | <sup>1</sup> <sub>5</sub> | <sup>4</sup> <sub>9</sub> | <sup>6</sup> <sub>8</sub> | 2 | 3                         |  |  |
| 5                         | <sup>8</sup> <sub>9</sub> | <sup>2</sup> <sub>4</sub> | <sup>9</sup> <sub>8</sub> | 7                         | <sup>3</sup> <sub>6</sub> | 3                         | 1 | 6                         |  |  |
| 7                         | <sup>2</sup> <sub>4</sub> | 3                         | 1                         | 6                         | <sup>2</sup> <sub>4</sub> | 5                         | 8 | 9                         |  |  |
| 6                         | <sup>8</sup> <sub>9</sub> | 1                         | <sup>2</sup> <sub>3</sub> | <sup>4</sup> <sub>8</sub> | <sup>3</sup> <sub>9</sub> | 5                         | 7 | <sup>2</sup> <sub>4</sub> |  |  |

|                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>5</sub> | <sup>1</sup> <sub>3</sub> | 4                         | 9                         | <sup>1</sup> <sub>5</sub> | 7                         | <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>3</sub> | <sup>3</sup> <sub>6</sub> |
| 8                         | <sup>1</sup> <sub>4</sub> | 9                         | <sup>2</sup> <sub>7</sub> | <sup>2</sup> <sub>7</sub> | 3                         | <sup>4</sup> <sub>5</sub> | 6                         | <sup>1</sup> <sub>4</sub> |                           |                           |
| 7                         | <sup>1</sup> <sub>4</sub> | 3                         | <sup>4</sup> <sub>8</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>6</sub> | <sup>4</sup> <sub>5</sub> | 2                         | <sup>1</sup> <sub>8</sub> | <sup>9</sup> <sub>7</sub> | <sup>3</sup> <sub>6</sub> |
| <sup>5</sup> <sub>9</sub> | <sup>3</sup> <sub>8</sub> | 6                         | <sup>2</sup> <sub>9</sub> | 4                         | 7                         | 1                         | <sup>3</sup> <sub>9</sub> | <sup>2</sup> <sub>3</sub> | <sup>3</sup> <sub>6</sub> | <sup>3</sup> <sub>7</sub> |
| <sup>1</sup> <sub>4</sub> | <sup>3</sup> <sub>8</sub> | <sup>1</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>2</sup> <sub>5</sub> | <sup>2</sup> <sub>4</sub> | <sup>2</sup> <sub>3</sub> | <sup>4</sup> <sub>8</sub> | <sup>3</sup> <sub>6</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>7</sub> |
| <sup>3</sup> <sub>4</sub> | <sup>2</sup> <sub>7</sub> | 1                         | <sup>3</sup> <sub>8</sub> | <sup>6</sup> <sub>9</sub> | <sup>4</sup> <sub>5</sub> | <sup>3</sup> <sub>6</sub> | <sup>4</sup> <sub>7</sub> | <sup>3</sup> <sub>9</sub> | <sup>5</sup> <sub>8</sub> | <sup>3</sup> <sub>6</sub> |
| <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>8</sub> | 9                         | <sup>1</sup> <sub>5</sub> | 6                         | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>3</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>6</sub> |
| <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>8</sub> | 5                         | <sup>2</sup> <sub>7</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>5</sub> | 6                         | 8                         | <sup>4</sup> <sub>9</sub> | <sup>3</sup> <sub>6</sub> |
| <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>8</sub> | 4                         | <sup>2</sup> <sub>7</sub> | <sup>1</sup> <sub>5</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>4</sub> | <sup>2</sup> <sub>3</sub> | <sup>1</sup> <sub>5</sub> | <sup>1</sup> <sub>2</sub> | <sup>3</sup> <sub>6</sub> |

|                               |                |                  |  |                |                             |                               |                                 |                               |
|-------------------------------|----------------|------------------|--|----------------|-----------------------------|-------------------------------|---------------------------------|-------------------------------|
| 9                             | 8              | <sup>3</sup> 5 6 | <sup>3</sup> 4 5                           | 2              | <sup>1</sup> 4 <sup>3</sup> | 7                             | <sup>1</sup> 4 5 6              | <sup>1</sup> 4 5              |
| <sup>1</sup> 7                | 4              | <sup>5</sup> 3   | <sup>3</sup> 7 <sup>5</sup> 9              | 6              | <sup>1</sup> 3 <sup>9</sup> | 2                             | <sup>1</sup> 5 <sup>9</sup>     | 8                             |
| <sup>1</sup> 7                | <sup>2</sup> 6 | <sup>2</sup> 5 6 | <sup>4</sup> 5 <sup>6</sup> 7 <sup>9</sup> | 8              | <sup>1</sup> 4 <sup>9</sup> | 3                             | <sup>1</sup> 4 5 6 <sup>9</sup> | <sup>1</sup> 4 5 <sup>9</sup> |
| <sup>3</sup> 7                | 9              | 8                | <sup>1</sup> 4 <sup>3</sup>                | 5              | 6                           | <sup>1</sup> 4                | 2                               | <sup>1</sup> 4 <sup>3</sup> 7 |
| <sup>2</sup> 3 <sup>6</sup> 7 | <sup>2</sup> 3 | 4                | <sup>1</sup> 3                             | 9              | <sup>2</sup> 8              | <sup>1</sup> 5 <sup>3</sup> 7 | <sup>1</sup> 5 <sup>3</sup> 7   |                               |
| 5                             | 1              | <sup>2</sup> 6   | <sup>2</sup> 8                             | <sup>4</sup> 3 | 7                           | <sup>6</sup> 4 <sup>9</sup>   | <sup>3</sup> 4 <sup>9</sup>     |                               |
| <sup>2</sup> 3 <sup>8</sup> 4 | <sup>2</sup> 3 | 1                | <sup>2</sup> 8                             | 7              | 5                           | 9                             | <sup>4</sup> 3                  | 6                             |
| <sup>2</sup> 8                | 5              | 9                | 6  | <sup>4</sup> 3 | <sup>2</sup> 8              | <sup>1</sup> 4                | <sup>1</sup> 4 <sup>3</sup> 7   | <sup>1</sup> 3 <sup>4</sup> 9 |
| <sup>4</sup> 3                | 6              | 7                | <sup>4</sup> 3 <sup>9</sup>                | 1              | <sup>4</sup> 3 <sup>9</sup> | 5                             | 8                               | 2                             |

|                |                               |                               |                               |                               |  |                               |                             |                               |
|----------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--|-------------------------------|-----------------------------|-------------------------------|
| <sup>3</sup> 7 | <sup>5</sup> 6                | <sup>3</sup> 7                | <sup>1</sup> 5 6              | 4                             | <sup>5</sup> 6 <sup>8</sup>                  | <sup>2</sup> 3 <sup>1</sup> 5 | <sup>2</sup> 9              |                               |
| <sup>3</sup> 9 | 1                             | 4                             | 7                             | <sup>2</sup> 5 <sup>8</sup>   | <sup>2</sup> 5 <sup>8</sup>                  | <sup>3</sup> 9                | <sup>5</sup> 8              | 6                             |
| 8              | <sup>5</sup> 6                | 2                             | 9                             | <sup>1</sup> 5 6              | 3  | 4                             | <sup>1</sup> 5 <sup>7</sup> | <sup>5</sup> 7                |
| 2              | <sup>4</sup> 8                | <sup>3</sup> 8                | <sup>5</sup> 6                | 7                             | <sup>5</sup> 6                               | 1                             | 9                           | <sup>4</sup> 8                |
| <sup>1</sup> 4 | 9                             | <sup>1</sup> 7 8              | <sup>2</sup> 3 <sup>4</sup> 8 | <sup>2</sup> 3 <sup>4</sup> 8 | <sup>2</sup> 4                               | 5                             | 6                           | <sup>4</sup> 7 8              |
| 6              | <sup>4</sup> 7 8              | 5                             | <sup>4</sup> 8                | 9                             | 1  | <sup>2</sup> 8                | <sup>4</sup> 7              | 3                             |
| 5              | <sup>4</sup> 8                | <sup>3</sup> 1 <sup>3</sup> 8 | <sup>1</sup> 4 <sup>6</sup> 8 | <sup>1</sup> 3 <sup>6</sup> 8 | <sup>4</sup> 6 <sup>8</sup> 9                | 7                             | 2                           | <sup>4</sup> 8 <sup>9</sup>   |
| <sup>3</sup> 4 | <sup>2</sup> 3 <sup>7</sup> 8 | 6                             | <sup>4</sup> 5 <sup>8</sup>   | <sup>2</sup> 3 <sup>5</sup> 8 | <sup>2</sup> 3 <sup>4</sup> 5 <sup>8</sup> 9 | <sup>8</sup> 9                | <sup>4</sup> 5              | 1                             |
| <sup>1</sup> 4 | <sup>2</sup> 4                | <sup>1</sup> 8                | <sup>1</sup> 2 <sup>4</sup> 5 | <sup>1</sup> 2 <sup>5</sup> 8 | 7  | 6                             | 3                           | <sup>4</sup> 5 <sup>8</sup> 9 |

|                |  |                |   |                |                |                               |                               |                               |
|----------------|--|----------------|---|----------------|----------------|-------------------------------|-------------------------------|-------------------------------|
| 7              | 8  | 5              | 9 | 4              | 3              | 6                             | 1                             | 2                             |
| <sup>4</sup> 6 | 3  | 2              | 8 | <sup>5</sup> 6 | 1              | <sup>4</sup> 5 <sup>9</sup> 7 | <sup>4</sup> 5 <sup>9</sup> 7 |                               |
| <sup>4</sup> 6 | 1  | 9              | 2 | <sup>5</sup> 6 | 7              | 3                             | <sup>5</sup> 8                | <sup>4</sup> 5 <sup>8</sup>   |
| 8              | <sup>4</sup> 6 <sup>4</sup> 6                | 5              | 1 | 2              | 7              | 3                             | 9                             |                               |
| 9              | <sup>7</sup> 5                               | <sup>1</sup> 3 | 4 | <sup>7</sup> 3 | 8              | <sup>2</sup> 5                | <sup>2</sup> 6                | <sup>1</sup> 5 6              |
| 2              | <sup>7</sup> 5                               | <sup>1</sup> 3 | 6 | <sup>7</sup> 3 | 9              | <sup>4</sup> 5 <sup>8</sup>   | <sup>5</sup> 8                | <sup>1</sup> 4 5 <sup>8</sup> |
| 5              | <sup>2</sup> 9                               | 7              | 1 | 8              | 6              | <sup>2</sup> 9                | 4                             | 3                             |
| 3              | <sup>4</sup> 6 <sup>4</sup> 6 <sup>9</sup> 8 | 7              | 2 | <sup>4</sup> 5 | 1              | <sup>6</sup> 9                | <sup>5</sup> 6 <sup>8</sup>   |                               |
| 1              | <sup>4</sup> 2 <sup>6</sup> 4 <sup>6</sup> 8 | 3              | 9 | <sup>4</sup> 5 | <sup>2</sup> 5 | <sup>2</sup> 6                | <sup>5</sup> 6 <sup>7</sup> 8 |                               |

|                               |                               |                               |                               |  |                             |                               |                               |  |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--|-----------------------------|-------------------------------|-------------------------------|--|
| 6                             | 7                             | <sup>1</sup> 2 3 <sup>8</sup> | <sup>1</sup> 5 <sup>9</sup>   | <sup>3</sup> 1 <sup>5</sup> 9                | <sup>2</sup> 5 <sup>9</sup> | 4                             | <sup>1</sup> 5 <sup>9</sup>   | <sup>2</sup> 3 <sup>5</sup> 8 <sup>9</sup> |
| <sup>1</sup> 2 3 <sup>8</sup> | <sup>1</sup> 2                | 5                             | 7                             | 4  | <sup>2</sup> 9              | <sup>1</sup> 8                | 6                             | <sup>2</sup> 3 <sup>8</sup> 9              |
| 9                             | 4                             | <sup>1</sup> 2 3              | 8                             | <sup>1</sup> 5                               | 6                           | <sup>1</sup> 7                | <sup>1</sup> 5 <sup>3</sup> 7 | <sup>2</sup> 3 <sup>5</sup>                |
| <sup>1</sup> 5 <sup>8</sup>   | <sup>1</sup> 5 <sup>8</sup>   | 4                             | <sup>3</sup> 9                | <sup>3</sup> 9                               | 7                           | 2                             | <sup>1</sup> 8                | 6  |
| 7                             | 6                             | <sup>1</sup> 3                | <sup>2</sup> 5                | <sup>2</sup> 5                               | 8                           | <sup>1</sup> 9                | 4                             | <sup>3</sup> 9                             |
| <sup>2</sup> 3 <sup>8</sup>   | <sup>2</sup> 8                | <sup>2</sup> 3 <sup>8</sup> 9 | 4                             | 6  | 1                           | 5                             | <sup>3</sup> 8                | 7  |
| <sup>1</sup> 2 <sup>5</sup> 8 | 3                             | <sup>1</sup> 2 <sup>6</sup> 8 | <sup>1</sup> 2 <sup>5</sup> 9 | <sup>1</sup> 2 <sup>5</sup> 7 <sup>8</sup> 9 | 4                           | <sup>7</sup> 8 <sup>9</sup> 7 | <sup>5</sup> 9                | <sup>5</sup> 8 <sup>9</sup>                |
| <sup>1</sup> 5 <sup>8</sup>   | <sup>1</sup> 5 <sup>8</sup> 9 | 7                             | 6                             | <sup>1</sup> 5 <sup>8</sup> 9                | <sup>5</sup> 9              | 3                             | 2                             | 4  |
| 4                             | <sup>2</sup> 5 <sup>8</sup> 9 | <sup>2</sup> 6                | <sup>2</sup> 5                | <sup>2</sup> 5 <sup>8</sup> 9                | 3                           | <sup>7</sup> 8 <sup>9</sup> 7 | <sup>5</sup> 9                | 1  |

|  |  |  |  |                               |                               |                               |  |  |
|--|--|--|--|-------------------------------|-------------------------------|-------------------------------|--|--|
| 2  | <sup>1</sup> 7                             | 6  | 9  | 5                             | 3                             | <sup>4</sup> 7 8              | <sup>1</sup> 4 <sup>8</sup>                  | <sup>4</sup> 7 8                           |
| <sup>4</sup> 7                             | <sup>3</sup> 1 <sup>3</sup> 7 <sup>9</sup> | <sup>1</sup> 4 <sup>5</sup> 7 <sup>9</sup> | <sup>1</sup> 6 <sup>7</sup> 8              | <sup>1</sup> 6 <sup>7</sup> 8 | 2                             | <sup>7</sup> 5 <sup>9</sup>   | <sup>6</sup> 9 <sup>7</sup>                  | <sup>5</sup> 6 <sup>9</sup>                |
| <sup>7</sup> 9                             | 8  | <sup>1</sup> 5 <sup>7</sup> 9              | <sup>1</sup> 6 <sup>7</sup>                | <sup>1</sup> 6                | 4                             | <sup>7</sup> 5 <sup>9</sup>   | <sup>2</sup> 5 <sup>6</sup> 7 <sup>9</sup>   |  |
| <sup>4</sup> 6 <sup>7</sup> 8              | <sup>1</sup> 2 <sup>7</sup>                | <sup>1</sup> 4 <sup>7</sup>                | <sup>2</sup> 5 <sup>6</sup> 7 <sup>8</sup> | <sup>2</sup> 6 <sup>7</sup> 8 | 9                             | <sup>4</sup> 5 <sup>8</sup>   | <sup>2</sup> 6 <sup>4</sup> 5 <sup>6</sup> 8 | <sup>2</sup> 3 <sup>4</sup> 5 <sup>6</sup> |
| <sup>4</sup> 6 <sup>7</sup> 8 <sup>9</sup> | <sup>2</sup> 7                             | <sup>4</sup> 7 <sup>9</sup>                | 3  | <sup>2</sup> 6 <sup>7</sup> 8 | <sup>5</sup> 6 <sup>7</sup> 8 | 1                             | <sup>4</sup> 6 <sup>8</sup> 9                | <sup>4</sup> 5 <sup>6</sup> 8 <sup>9</sup> |
| <sup>6</sup> 8 <sup>9</sup>                | 5  | 3  | <sup>1</sup> 2 <sup>6</sup> 8              | <sup>1</sup> 4 <sup>6</sup> 8 | <sup>2</sup> 8                | 7                             | <sup>2</sup> 6 <sup>8</sup> 9                |  |
| 1  | <sup>4</sup> 6                             | 2  | <sup>5</sup> 6 <sup>7</sup> 8              | <sup>3</sup> 9 <sup>7</sup> 8 | <sup>5</sup> 6 <sup>7</sup> 8 | <sup>4</sup> 7 <sup>8</sup> 9 | <sup>4</sup> 8 <sup>9</sup>                  | <sup>4</sup> 7 <sup>8</sup> 9              |
| 5  | <sup>4</sup> 6                             | 8  | <sup>2</sup> 7                             | <sup>3</sup> 9                | <sup>6</sup> 4 <sup>7</sup> 9 | <sup>2</sup> 3 <sup>4</sup> 9 | <sup>2</sup> 1                               |  |
| <sup>3</sup> 7                             | <sup>3</sup> 7                             |  | 4  | <sup>1</sup> 2 <sup>8</sup>   | <sup>1</sup> 8                | 6                             | 5  | <sup>2</sup> 8                             |

|  |                               |                               |                               |  |  |                               |                |  |
|--|-------------------------------|-------------------------------|-------------------------------|--|--|-------------------------------|----------------|--|
| <sup>2</sup> 7                             | 5                             | <sup>7</sup> 8                | 6                             | <sup>2</sup> 8                             | <sup>9</sup> 8                               | 3                             | 1              | 4  |
| <sup>4</sup> 8                             | 1                             | <sup>4</sup> 6                | 7                             | 5  | 3  | 2                             | <sup>6</sup> 8 | <sup>6</sup> 8                             |
| <sup>2</sup> 8                             | 3                             | <sup>6</sup> 8                | <sup>1</sup> 2 <sup>4</sup> 8 | <sup>1</sup> 2 <sup>4</sup> 8              | <sup>4</sup> 8                               | 7                             | 5              | <sup>6</sup> 8                             |
| <sup>4</sup> 7                             | 2                             | 1                             | <sup>4</sup> 5 <sup>8</sup> 9 | <sup>4</sup> 7 <sup>8</sup> 9              | <sup>4</sup> 5 <sup>7</sup> 8 <sup>9</sup>   | 6                             | 3              | <sup>5</sup> 8 <sup>9</sup>                |
| 3  | 6                             | 9                             | <sup>1</sup> 4 <sup>5</sup> 8 | <sup>1</sup> 4 <sup>7</sup> 8              | 2  | <sup>1</sup> 5 <sup>8</sup> 7 | <sup>4</sup> 7 | <sup>1</sup> 5 <sup>8</sup>                |
| <sup>4</sup> 5 <sup>7</sup> 8              | <sup>4</sup> 7                | <sup>4</sup> 5 <sup>7</sup> 8 | 3                             | <sup>1</sup> 6 <sup>9</sup>                | <sup>6</sup> 9                               | <sup>1</sup> 9                | <sup>4</sup> 7 | 2  |
| 6  | <sup>7</sup> 8                | 2                             | <sup>5</sup> 8 <sup>9</sup>   | <sup>7</sup> 8 <sup>9</sup>                | 1  | 4                             | <sup>8</sup> 9 | <sup>5</sup> 8 <sup>9</sup>                |
| <sup>1</sup> 4 <sup>5</sup> 7 <sup>8</sup> | <sup>4</sup> 7 <sup>8</sup> 9 | <sup>4</sup> 5 <sup>7</sup> 8 | <sup>4</sup> 5 <sup>8</sup> 9 | <sup>4</sup> 6 <sup>7</sup> 8 <sup>9</sup> | <sup>4</sup> 5 <sup>6</sup> 7 <sup>8</sup> 9 | <sup>1</sup> 5 <sup>8</sup> 9 | <sup>2</sup> 1 | <sup>3</sup> 5 <sup>6</sup> 8 <sup>9</sup> |
| <sup>1</sup> 4 <sup>5</sup> 8              | <sup>4</sup> 8                | 3                             | <sup>4</sup> 5 <sup>8</sup> 9 | <sup>2</sup> 4 <sup>6</sup> 8              | <sup>4</sup> 5 <sup>6</sup> 8 <sup>9</sup>   | <sup>1</sup> 5 <sup>8</sup> 9 | <sup>6</sup> 8 | 7  |

|                          |                       |                            |                          |                        |                        |                          |                        |                          |
|--------------------------|-----------------------|----------------------------|--------------------------|------------------------|------------------------|--------------------------|------------------------|--------------------------|
| <sup>2</sup><br>4 5<br>9 | 4                     | <sup>9</sup><br>6          | 7                        | <sup>2</sup><br>4<br>9 | 8                      | <sup>1 2</sup><br>4 5    | 3                      | <sup>1</sup><br>4 5<br>9 |
| <sup>2</sup><br>4<br>9   | 1                     | <sup>2</sup><br>4<br>7     | <sup>3</sup><br>4<br>9   | 5                      | <sup>2 3</sup><br>9    | <sup>2</sup><br>4<br>7   | 8                      | 6                        |
| 3                        | <sup>4</sup><br>7 8 9 | <sup>2</sup><br>4 5<br>7 8 | 1                        | <sup>4</sup><br>9      | 6                      | <sup>2</sup><br>4 5<br>7 | <sup>2</sup><br>5<br>9 | <sup>4 5</sup><br>9      |
| 6                        | <sup>4</sup><br>7 8   | <sup>3</sup><br>4<br>7 8   | <sup>5</sup><br>9        | 1                      | <sup>3</sup><br>7<br>9 | <sup>4 5</sup><br>9      | 5                      | <sup>9</sup><br>2        |
| 1                        | 5                     | 9                          | 2                        | 8                      | 4                      | <sup>7</sup><br>6<br>7   | <sup>6</sup><br>6<br>9 | 3                        |
| <sup>2</sup><br>4<br>9   | <sup>4</sup><br>7     | <sup>3</sup><br>4<br>7     | <sup>2 3</sup><br>5<br>9 | 6                      | <sup>3</sup><br>7<br>9 | 8                        | <sup>1</sup><br>5<br>9 | <sup>1</sup><br>4 5<br>9 |
| <sup>4 5</sup><br>9      | 4                     | <sup>3</sup><br>6<br>9     | <sup>4 5</sup><br>9      | 8                      | <sup>4</sup><br>9      | <sup>1 2</sup><br>9      | <sup>1 2</sup><br>5 6  | 7                        |
| 8                        | <sup>4</sup><br>9     | <sup>6</sup><br>4 5<br>9   | 4                        | 7                      | <sup>1 2</sup><br>9    | 3                        | <sup>1 2</sup><br>5 6  | <sup>1</sup><br>5        |
| 7                        | 2                     | 1                          | 6                        | 3                      | 5                      | 9                        | 4                      | 8                        |

|                   |                          |                        |                        |                        |                        |                            |                          |                          |
|-------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|----------------------------|--------------------------|--------------------------|
| <sup>1</sup><br>3 | 6                        | <sup>4</sup><br>3      | 2                      | 8                      | <sup>1</sup><br>9      | <sup>3</sup><br>4 5<br>7 9 | <sup>4 5</sup><br>7 9    | <sup>4</sup><br>7        |
| 8                 | <sup>1</sup><br>4        | <sup>3</sup><br>9      | 5                      | <sup>1</sup><br>4      | <sup>3</sup><br>7 9    | <sup>1</sup><br>3          | <sup>2</sup><br>4 6<br>9 | <sup>2</sup><br>6 4<br>9 |
| 4                 | 7                        | 2                      | <sup>4 5</sup><br>9    | <sup>6</sup><br>9      | <sup>5 6</sup><br>9    | 3                          | 1                        | 8                        |
| 4                 | 2                        | 1                      | 6                      | 5                      | <sup>4</sup><br>9      | <sup>7 8</sup><br>9        | <sup>7 8</sup><br>9      | 3                        |
| 6                 | <sup>4</sup><br>9        | <sup>3</sup><br>7<br>9 | 7                      | 8                      | 2                      | <sup>1</sup><br>4          | <sup>3</sup><br>4<br>9   | 5                        |
| <sup>5</sup><br>9 | <sup>3</sup><br>4 5<br>9 | <sup>8</sup><br>9      | <sup>1</sup><br>9      | <sup>3</sup><br>9      | 7                      | <sup>1 2</sup><br>4<br>9   | <sup>2</sup><br>4<br>9   | 6                        |
| <sup>1</sup><br>5 | <sup>3</sup><br>5<br>9   | 9                      | <sup>1</sup><br>7      | <sup>5</sup><br>9      | 4                      | 8                          | <sup>2</sup><br>5 6<br>7 | <sup>2</sup><br>5 6<br>7 |
| 7                 | 8                        | 4                      | 6                      | <sup>1</sup><br>5<br>9 | <sup>6</sup><br>9      | 2                          | <sup>4 5</sup><br>9      | <sup>3</sup><br>4<br>9   |
| 2                 | <sup>1</sup><br>4 5<br>9 | <sup>3</sup><br>4<br>9 | <sup>3</sup><br>6<br>9 | <sup>1</sup><br>7      | <sup>3</sup><br>5<br>9 | <sup>6</sup><br>9          | <sup>4 5</sup><br>7 8    | <sup>4 5</sup><br>7 8    |

|  |  |                             |                               |                               |                               |                                 |                             |                           |
|--|--|-----------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------|---------------------------|
| <div>6</div> <div>7 8</div>                  | <div>3 6</div> <div>7 8</div>              | <div>3 6</div>              | 4                             | 5                             | 1                             | <div>7 8</div> <div>6</div>     | 2                           | 9                         |
| 1  | <div>5 6</div> <div>7 8</div>              | 2                           | <div>3 6</div> <div>8 9</div> | <div>3 6</div> <div>7 8</div> | <div>3 6</div> <div>8 9</div> | <div>5 6</div> <div>7 8</div>   | <div>3</div> <div>7 8</div> | 4                         |
| <div>4 5 6</div> <div>7 8</div>              | <div>4 5 6</div> <div>7 8</div>            | 9                           | <div>3 6</div> <div>8</div>   | <div>2 3</div> <div>7 8</div> | <div>2 3</div> <div>6</div>   | <div>5 6</div> <div>7 8</div>   | <div>3</div> <div>7 8</div> | 1                         |
| <div>2</div> <div>4 5 6</div> <div>8 9</div> | <div>2</div> <div>4 5 6</div> <div>8</div> | 7                           | <div>6 4</div> <div>8 9</div> | <div>6 4</div> <div>8</div>   | <div>6 4</div> <div>8 9</div> | 3                               | 1                           | <div>2</div> <div>5</div> |
| <div>4</div> <div>8</div>                    | <div>6 4</div> <div>8</div>                | <div>3 6</div> <div>9</div> | 1                             | 2                             | <div>3 6</div> <div>8</div>   | 5                               | 9                           | <div>4</div> <div>6</div> |
| <div>2</div> <div>4 5 6</div> <div>9</div>   | <div>2 3</div> <div>4 5 6</div>            | <div>3 6</div> <div>4</div> | 7                             | 1                             | <div>3 6</div> <div>4</div>   | <div>2</div> <div>4</div>       | <div>4 5 6</div>            | 8                         |
| <div>2</div> <div>4</div>                    | 1  | <div>4 5</div>              | <div>3 6</div> <div>5 8</div> | <div>2 3</div> <div>4 8</div> | 7                             | <div>2</div> <div>4 8</div>     | 9                           | 6                         |
| <div>2</div> <div>4 6</div> <div>7</div>     | <div>2</div> <div>4 6</div> <div>7</div>   | 8                           | <div>5 6</div>                | 9                             | <div>2 6</div> <div>4</div>   | 1                               | <div>4 5</div>              | 3                         |
| 3  | 9  | <div>4 5 6</div>            | 1                             | <div>2 6</div> <div>4 8</div> | <div>2 6</div> <div>4 8</div> | <div>2 6</div> <div>4 7 8</div> | <div>2</div> <div>7 8</div> | <div>2</div> <div>5</div> |

|                            |                              |                            |                        |                            |                            |                            |                              |                            |
|----------------------------|------------------------------|----------------------------|------------------------|----------------------------|----------------------------|----------------------------|------------------------------|----------------------------|
| <sup>2</sup><br>4 5 6<br>9 | <sup>2 3</sup><br>4 5 6<br>9 | <sup>3</sup><br>4 5 6<br>9 | 2                      | <sup>2</sup><br>5<br>8     | <sup>1</sup><br>4 5<br>8 9 | <sup>3</sup><br>9          | <sup>1 2</sup><br>4 6<br>7 8 | <sup>1 2</sup><br>6<br>7 8 |
| 1                          | 7                            | <sup>4 5</sup><br>9        | 6                      | <sup>2</sup><br>4 5<br>8 9 | <sup>2</sup><br>5<br>8     | <sup>4</sup><br>9          | 3                            | <sup>2</sup><br>8          |
| <sup>2</sup><br>4<br>9     | 8                            | <sup>3</sup><br>4<br>6     | 7                      | <sup>2</sup><br>4          | <sup>1</sup><br>3          | <sup>1 2</sup><br>4 6      | 5                            | 9                          |
| 9                          | <sup>1</sup><br>5 6<br>8     | <sup>1</sup><br>5 6<br>8   | <sup>2</sup><br>5<br>8 | <sup>2</sup><br>5<br>8     | 4                          | 7                          | <sup>1 2</sup><br>6          | 3                          |
| 3                          | <sup>4 5 6</sup><br>9        | 2                          | 9                      | 1                          | 7                          | <sup>4 5 6</sup><br>8      | <sup>4</sup><br>6<br>9       | <sup>5 6</sup><br>8        |
| <sup>4 5</sup><br>8        | <sup>1</sup><br>4 5          | 7                          | 3                      | 6                          | <sup>2</sup><br>5<br>8     | <sup>1 2</sup><br>4 5<br>9 | <sup>1 2</sup><br>4<br>9     | <sup>2</sup><br>5          |
| 7                          | <sup>2</sup><br>5 6<br>9     | <sup>5 6</sup><br>8 9      | 4                      | 3                          | <sup>2</sup><br>5 6<br>8   | <sup>2</sup><br>5 6<br>9   | <sup>2</sup><br>6<br>9       | 1                          |
| <sup>2</sup><br>4 5 6<br>8 | <sup>1 2</sup><br>4 5 6<br>8 | <sup>1</sup><br>4 5 6<br>8 | <sup>2</sup><br>5<br>8 | <sup>2</sup><br>5<br>7 8   | 9                          | 3                          | <sup>2</sup><br>6<br>7       | <sup>2</sup><br>5 6        |
| <sup>2</sup><br>5 6        | <sup>2 3</sup><br>5 6<br>9   | <sup>3</sup><br>5 6<br>9   | 1                      | <sup>2</sup><br>5          | <sup>2</sup><br>5 6        | 8                          | <sup>2</sup><br>6<br>9       | 4                          |

|                                |                            |                          |                          |                              |                          |                        |                          |                   |
|--------------------------------|----------------------------|--------------------------|--------------------------|------------------------------|--------------------------|------------------------|--------------------------|-------------------|
| <sup>2</sup><br>6<br>9         | 3                          | 4                        | <sup>1 2</sup><br>5      | <sup>1</sup><br>5<br>9       | <sup>2</sup><br>9        | 8                      | <sup>1 2</sup><br>6<br>9 | 7                 |
| <sup>2</sup><br>7<br>9         | 5                          | <sup>2</sup><br>6<br>9   | 8                        | <sup>1</sup><br>7<br>9       | <sup>2 3</sup><br>7<br>9 | <sup>1</sup><br>6<br>9 | <sup>1 2</sup><br>6<br>9 | 4                 |
| 1                              | 8                          | <sup>2</sup><br>7<br>9   | <sup>4</sup><br>7        | <sup>4</sup><br>7<br>9       | 6                        | 5                      | <sup>2</sup><br>9        | 3                 |
| <sup>2</sup><br>7 8 9          | <sup>1 2</sup><br>7<br>9   | <sup>6</sup><br>9        | 3                        | <sup>2</sup><br>7            | <sup>7 8 9</sup><br>9    | <sup>2</sup><br>7 8 9  | <sup>1</sup><br>6<br>9   | 4 5               |
| <sup>4 5</sup><br>7 9          | <sup>4</sup><br>7          | <sup>9</sup><br>7 9      | 6                        | <sup>4 5</sup><br>7          | <sup>3</sup><br>9        | 1                      | <sup>2</sup><br>7<br>9   | 8                 |
| <sup>2</sup><br>4 5 6<br>7 8 9 | <sup>1 2</sup><br>4 7<br>9 | <sup>1 2</sup><br>6<br>9 | <sup>2</sup><br>4 5<br>7 | <sup>3</sup><br>4 5<br>7 8 9 | <sup>2 3</sup><br>7 8 9  | <sup>1</sup><br>9      | <sup>3</sup><br>6<br>9   | <sup>1</sup><br>6 |
| <sup>6</sup><br>9              | <sup>1</sup><br>6<br>9     | 8                        | 3                        | 2                            | 4                        | 7                      | 5                        | <sup>1</sup><br>6 |
| <sup>4</sup><br>7              | <sup>3</sup><br>6<br>7     | <sup>1</sup><br>6<br>7   | 9                        | <sup>1</sup><br>7 8          | 5                        | <sup>1</sup><br>4      | <sup>3</sup><br>6<br>8   | 2                 |
| <sup>2 3</sup><br>4 7          | <sup>1 2</sup><br>4 6      | 5                        | <sup>1</sup><br>7        | <sup>1</sup><br>7 8          | <sup>6</sup><br>7 8      | <sup>1</sup><br>4      | <sup>3</sup><br>6<br>8   | 9                 |

|                          |                        |                        |                       |                     |                        |                   |                            |                       |
|--------------------------|------------------------|------------------------|-----------------------|---------------------|------------------------|-------------------|----------------------------|-----------------------|
| 1                        | 4                      | 3                      | 5                     | <sup>6</sup><br>8 9 | <sup>6</sup><br>9      | 7                 | <sup>2</sup><br>8 9        | <sup>2</sup><br>9     |
| <sup>2</sup><br>8 9      | 6                      | <sup>2</sup><br>8 9    | 7                     | <sup>8 9</sup><br>9 | 4                      | 3                 | 5                          | 1                     |
| <sup>7 8 9</sup><br>9    | <sup>7 8 9</sup><br>9  | 5                      | 3                     | 2                   | 1                      | <sup>4</sup><br>8 | <sup>4</sup><br>8 9        | 6                     |
| <sup>2</sup><br>4 5<br>7 | <sup>1</sup><br>5<br>7 | <sup>2</sup><br>4<br>7 | 8                     | 3                   | <sup>6</sup><br>7      | 9                 | <sup>1 2</sup><br>4 6<br>7 | <sup>2</sup><br>5     |
| 6                        | <sup>1</sup><br>7 8 9  | <sup>5</sup><br>7 8 9  | <sup>4</sup><br>7 8 9 | <sup>1</sup><br>4   | <sup>1</sup><br>9 7 9  | 2                 | <sup>1</sup><br>4 5        | <sup>1</sup><br>4 7   |
| <sup>2</sup><br>4 7 9    | 3                      | <sup>4</sup><br>7 9    | <sup>2</sup><br>9     | <sup>1</sup><br>4   | <sup>1</sup><br>6<br>9 | 5                 | <sup>1</sup><br>4 6        | <sup>1 2</sup><br>4 6 |
| 3                        | 2                      | 1                      | 6                     | 4                   | <sup>7</sup><br>9      | <sup>5</sup><br>8 | <sup>7 8 9</sup><br>9      | <sup>5</sup><br>9     |
| <sup>4</sup><br>7 8 9    | <sup>7 8 9</sup><br>9  | <sup>4</sup><br>7 8 9  | 2                     | 5                   | 3                      | <sup>1</sup><br>6 | <sup>1</sup><br>6          | <sup>4</sup><br>7 9   |
| <sup>4 5</sup><br>7 9    | <sup>5</sup><br>9      | 6                      | <sup>1</sup><br>9     | <sup>1</sup><br>7 9 | 8                      | 2                 | 3                          | <sup>4</sup><br>7 9   |



|        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1<br>8 | 3      | 7      | 1<br>8 | 3<br>6 | 1<br>4 | 3<br>6 | 4<br>8 | 3<br>6 | 2      | 1<br>4 | 1<br>8 | 6<br>9 | 5      |
| 1<br>5 | 3<br>8 | 9      | 1<br>5 | 3<br>6 | 1<br>4 | 3<br>6 | 4<br>8 | 3<br>6 | 4<br>7 | 1<br>4 | 1<br>8 | 6<br>9 | 2      |
| 2      | 4      | 1<br>8 | 6      | 1<br>9 | 6      | 5      | 7      | 6      | 7<br>8 | 1<br>7 | 1<br>8 | 6<br>9 | 3      |
| 6      | 1<br>8 | 9      | 7      | 2      | 5      | 1<br>8 | 3<br>9 | 1<br>8 | 3      | 4      |        |        |        |
| 4      | 3      | 5      | 2      | 8      | 4      | 3      | 1      | 6      | 7      | 9      |        |        |        |
| 4<br>7 | 3<br>8 | 1<br>8 | 3<br>4 | 3<br>7 | 4<br>6 | 4<br>6 | 9      | 2      | 5      | 1<br>8 |        |        |        |
| 1<br>7 | 3<br>5 | 6      | 1<br>7 | 3<br>5 | 2      | 7      | 3      | 8      | 9      | 4      | 1<br>7 |        |        |
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|        |        |        |   |   |        |        |   |   |   |   |   |   |   |
|--------|--------|--------|---|---|--------|--------|---|---|---|---|---|---|---|
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| 5      | 2      | 4      | 8      | 3      | 1 | 3 | 6 | 7 | 9 | 1 | 3 | 8 |   |   |
| 1      | 6      | 7      | 1      | 4      | 5 | 8 | 2 | 4 | 5 | 9 | 3 | 1 | 6 | 8 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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|            |              |            |                |              |              |            |
|------------|--------------|------------|----------------|--------------|--------------|------------|
| 2 3<br>9   | 4 3<br>6 9   | 4 6<br>9   | 4 2<br>8       | 1 4 2<br>8 6 | 5 4 3<br>9   | 7          |
| 8          | 1 7          | 1 7        | 9 4 3          | 5            | 6 2 4 3      |            |
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|---|----------|--------------|------------------------|-----------------|----------------|--------------|---|
| 1 | 3        | 7            | 4 6 4 6                | 2               | 5              | 9            | 8 |
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|            |                      |                  |              |            |         |   |   |   |
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