

Step 0: Start

Initial puzzle & candidates.

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

Step 1: Hidden Single

R3C6 = 2 (hidden single in its unit).

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

Step 2: Hidden Single

R7C2 = 4 (hidden single in its unit).

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

Step 3: Hidden Single

R6C1 = 5 (hidden single in its unit).

13 9	13 6 9	3 9	43 6	7	8	2	13 56 9	456 9
3 89	5	2	1	33 64 9	33 64 9	46 9	33 68 9	7
4	7	3 89	33 6	5	2	1 6 9	13 68 9	33 6 9
6	3 97 9	3 9	2	4	3 7	1 5 9	1 5 9	8
2 789	2 89	4	5	1 6 8	6 7	3	12 6 9	6 9
5	23 8	1	9	33 6 8	33 64 6	7	46	46
3 9	4	5	7	33 6 9	1	8	33 6 9	2
23 789	23 89	6	43 8	23 89	33 45 9	5 79	33 5 9	1
123 789	123 89	3 789	33 6 8	23 6 89	33 56 9	56 79	4	33 56 9

Step 4: Hidden Single

R6C2 = 2 (hidden single in its unit).

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

Step 5: Hidden Single

R5C8 = 2 (hidden single in its unit).

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

Step 6: Hidden Single

R5C5 = 1 (hidden single in its unit).

13 9	13 6 9	3 9	43 6	7	8	2	13 56 9	456 9
3 89	5	2	1	33 64 99	33 64 99	46 9	33 68 99	7
4	7	3 89	33 6	5	2	1 6 9	13 6 89	33 6 9
6	3 97	3 9	2	4	3 7	1 5 9	1 5 9	8
789	89	4	5	1	6 7	3	2	6 9
5	2	1	9	33 6 8	33 64 6	7	46	46
3 9	4	5	7	33 6 9	1	8	33 6 9	2
23 789	3 89	6	43 8	23 89	33 45 9	5 79	33 5 9	1
123 789	13 89	3 789	33 6 8	23 6 89	33 56 9	56 79	4	33 56 9

Step 7: Hidden Single

R6C5 = 8 (hidden single in its unit).

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

Step 8: Hidden Single

R6C6 = 3 (hidden single in its unit).

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

Step 9: Naked Single

R4C6 = 7 (naked single).

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

Step 10: Naked Single

R5C6 = 6 (naked single).

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

Step 11: Naked Single

R5C9 = 9 (naked single).

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

Step 12: Naked Single

R5C2 = 8 (naked single).

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

Step 13: Naked Single

R5C1 = 7 (naked single).

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

Step 14: Hidden Single

R8C7 = 7 (hidden single in its unit).

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

Step 15: Hidden Single

R9C3 = 7 (hidden single in its unit).

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

Step 16: Hidden Single

R1C2 = 6 (hidden single in its unit).

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

Step 17: Hidden Single

R9C2 = 1 (hidden single in its unit).

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

Step 18: Hidden Single

R1C1 = 1 (hidden single in its unit).

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

Step 19: Hidden Single

R3C3 = 8 (hidden single in its unit).

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

Step 20: Hidden Single

R2C8 = 8 (hidden single in its unit).

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

Step 21: Locked Candidates (Pointing)

In box 2, digit 9 sits only in row 2 → remove 9 from row 2 outside the box.

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

Step 22: Naked Single

R2C1 = 3 (naked single).

1	6		⁴ ₉	7	8	2	³ ₉	³ _{4 5}
3	5	2	1	⁶ ₉	⁴ ₉	⁴ ₆	8	7
4	7	8	³ ₆	5	2	¹ _{6 9}	¹ _{3 6 9}	³ ₆
6	³ ₉	³ ₉	2	4	7	¹ ₅	¹ ₅	8
7	8	4	5	1	6	3	2	9
5	2	1	9	8	3	⁴ ₆	7	⁴ ₆
⁹	4	5	7	³ _{6 9}	1	8	³ _{6 9}	2
² _{8 9}	³ ₉	6	⁴ ₈	³ _{2 3 9}	⁴ _{5 9}	7	³ _{5 9}	1
² _{8 9}	1	7	³ _{6 8}	² _{3 6 9}	⁵ ₉	⁵ _{6 9}	4	³ _{5 6}

Step 23: Naked Single

R1C3 = 9 (naked single).

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

Step 24: Naked Single

R4C3 = 3 (naked single).

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

Step 25: Naked Single

R4C2 = 9 (naked single).

1	6	9	<small>4</small> ³	7	8	2	<small>5</small> ³	<small>4 5</small> ³
3	5	2	1	<small>6 4</small> ⁹	<small>4 6</small> ⁹	8	7	
4	7	8	<small>3 6</small>	5	2	<small>1 6 9</small>	<small>1 3 6 9</small>	<small>3 6</small>
6	9	3	2	4	7	<small>1 5</small>	<small>1 5</small>	8
7	8	4	5	1	6	3	2	9
5	2	1	9	8	3	<small>4 6</small>	7	<small>4 6</small>
<small>9</small>	4	5	7	<small>3 6 9</small>	1	8	<small>3 6 9</small>	2
<small>2 8 9</small>	<small>3</small>	6	<small>4 8</small> ³	<small>2 3 9</small>	<small>4 5 9</small>	7	<small>3 5 9</small>	1
<small>2 8 9</small>	1	7	<small>3 6 8</small> ^{2 3}	<small>2 3 6 9</small>	<small>5 9</small>	<small>5 6 9</small>	4	<small>3 5 6</small>

Step 26: Naked Single

R7C1 = 9 (naked single).

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

Step 27: Naked Single

R8C2 = 3 (naked single).

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

Step 28: Locked Candidates (Pointing)

In box 2, digit 3 sits only in column 4 → remove 3 from column 4 outside the box.

1	6	9	<div>4 ³</div>	7	8	2	³ 5	³ 4 5
3	5	2	1	^{6 4} 9	^{4 6} 9	8	7	
4	7	8	<div>³ 6 </div>	5	2	¹ 6 9	^{1 3} 6 9	³ 6
6	9	3	2	4	7	¹ 5	¹ 5	8
7	8	4	5	1	6	3	2	9
5	2	1	9	8	3	^{4 6}	7	^{4 6}
9	4	5	7	³ 6	1	8	³ 6	2
² 8	3	6	⁴ 8	² 9	^{4 5} 9	7	⁵ 9	1
² 8	1	7	⁶ 8	^{2 3} 6 9	⁵ 9	^{5 6} 9	4	³ 5 6

Step 29: Naked Pair

Naked Pair [3, 6] in unit.

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

Step 30: Hidden Single

R7C8 = 6 (hidden single in its unit).

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

Step 31: Naked Single

R7C5 = 3 (naked single).

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

Step 32: Hidden Single

R9C9 = 3 (hidden single in its unit).

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

Step 33: Naked Single

R3C9 = 6 (naked single).

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

Step 34: Naked Single

R2C7 = 4 (naked single).

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

Step 35: Naked Single

R1C9 = 5 (naked single).

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

Step 36: Naked Single

R1C8 = 3 (naked single).

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

Step 37: Naked Single

R1C4 = 4 (naked single).

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

Step 38: Naked Single

R2C6 = 9 (naked single).

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

Step 39: Naked Single

R2C5 = 6 (naked single).

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

Step 40: Naked Single

R3C4 = 3 (naked single).

1	6	9	4	7	8	2	3	5
3	5	2	1	6	9	4	8	7
4	7	8	3	5	2	¹	¹	6
6	9	3	2	4	7	¹ ₅	¹ ₅	8
7	8	4	5	1	6	3	2	9
5	2	1	9	8	3	₆	7	₄
9	4	5	7	3	1	8	6	2
₂ ₈	3	6	₈	₂ ₉	_{4 5}	7	₅ ₉	1
₂ ₈	1	7	₆ ₈	₂ ₉	₅	₅ ₉	4	3

Step 41: Naked Single

R6C7 = 6 (naked single).

1	6	9	4	7	8	2	3	5
3	5	2	1	6	9	4	8	7
4	7	8	3	5	2	¹	¹	6
6	9	3	2	4	7	¹ ₅	¹ ₅	8
7	8	4	5	1	6	3	2	9
5	2	1	9	8	3	6	7	⁴
9	4	5	7	3	1	8	6	2
² ₈	3	6	⁸	² ₉	^{4 5}	7	⁵ ₉	1
² ₈	1	7	⁶ ₈	² ₉	⁵	⁵ ₉	4	3

Step 42: Naked Single

R6C9 = 4 (naked single).

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

Step 43: Naked Single

R8C4 = 8 (naked single).

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

Step 44: Naked Single

R8C1 = 2 (naked single).

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

Step 45: Naked Single

R8C5 = 9 (naked single).

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

Step 46: Naked Single

R8C8 = 5 (naked single).

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

Step 47: Naked Single

R4C8 = 1 (naked single).

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

Step 48: Naked Single

R3C8 = 9 (naked single).

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

Step 49: Naked Single

R3C7 = 1 (naked single).

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

Step 50: Naked Single

R4C7 = 5 (naked single).

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

Step 51: Naked Single

R8C6 = 4 (naked single).

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

Step 52: Naked Single

R9C1 = 8 (naked single).

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

Step 53: Naked Single

R9C4 = 6 (naked single).

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

Step 54: Naked Single

R9C5 = 2 (naked single).

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

Step 55: Naked Single

R9C6 = 5 (naked single).

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

Step 56: Naked Single

R9C7 = 9 (naked single).

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