## Doubling operation:

SCRAP MOST OF THIS SECTION ITS PROBABLY WRONG

With multiples of 3 included:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| number represented: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| before doubling: | A | B | C | D | E | F | G | H | I | J | K |  |  |  |  |  |  |  |  |  |  |
| after doubling: | A |  | B |  | C |  | D |  | E |  | F |  | G |  | H |  | I |  | J |  | K |
| number represented: | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 |
| before doubling: | A | B | C | D | E | F | G | H | I | J | K |  |  |  |  |  |  |  |  |  |  |
| number represented: | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 |
| after doubling: | A |  | B |  | C |  | D |  | E |  | F |  | G |  | H |  | I |  | J |  | K |

With multiples of 3 omitted:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| number represented: | 1 | 2 | 4 | 5 | 7 | 8 | 10 | 11 | 13 | 14 | 16 | 17 | 19 | 20 |  |  |  |  |  |  |  |
| before doubling: | B | C | E | F | H | I | K |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| after doubling: |  | B | C |  |  | E | F |  |  | H | I |  |  | K |  |  |  |  |  |  |  |
| number represented: | 97 | 98 | 100 | 101 | 103 | 104 | 106 | 107 | 109 | 110 | 112 | 113 | 115 | 116 | 118 | 119 | 121 | 122 | 124 | 125 | 127 |
| before doubling: | A | B | D | E | G | H | J | K |  |  |  |  |  |  |  |  |  |  |  |  |  |
| number represented: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| after doubling: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Shift operation:

With multiples of 3 included:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| number represented: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| before shift: | A | B | C | D | E | F | G | H | I | J | K |  |  |  |  |  |  |  |  |  |  |
| after shift: |  |  |  | A | B | C | D | E | F | G | H | I | J | K |  |  |  |  |  |  |  |

With multiples of 3 omitted:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| number represented: | 1 | 2 | 4 | 5 | 7 | 8 | 10 | 11 | 13 | 14 | 16 | 17 | 19 | 20 |  |  |  |  |  |  |  |
| before shift: | B | C | E | F | H | I | K |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| after shift: |  |  | B | C | E | F | H | I | K |  |  |  |  |  |  |  |  |  |  |  |  |