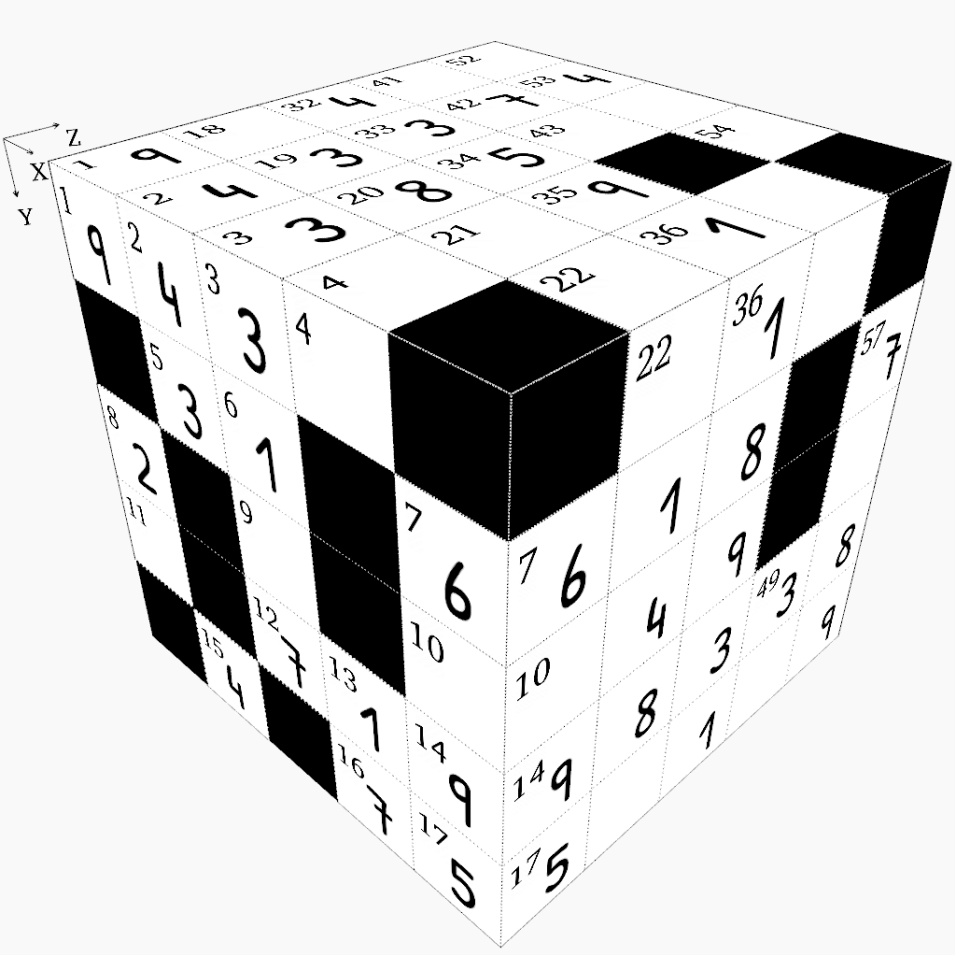
Difficulty: ☆☆☆☆☆

Cube - Beginner Puzzle #9

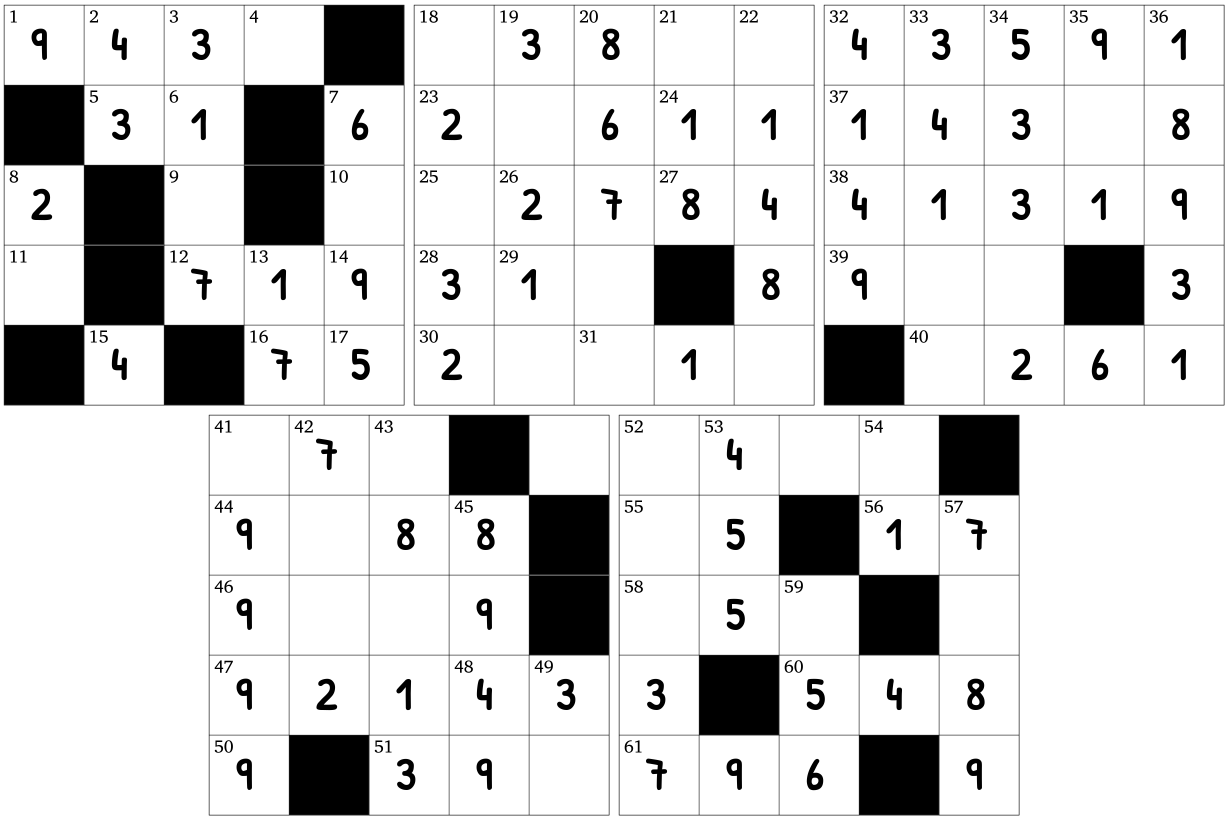


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

Rules:

1. "Words" may not start with a zero.
2. "Words" in the X direction read from left to right.
3. "Words" in the Y direction read from top to bottom.
4. "Words" in the Z direction read from front to back.
5. There is one unique solution which satisfies all the clues given below.
6. Some "words" may not have clues. They will be determined by the "words" which intersect them.

If we take the cube pictured above and divide it into individual X-Y layers, we will get these planes:



X Direction

1 X52 minus Y8
5 X55 minus Z48
12 Mean of Y53 and X39
16 Z48 plus X5
18 X51 times Y49
23 A prime number
25 Forty-eight times a prime number
28 A prime number
30 Two thousand twenty-two less than Z5
32 A prime number
37 Twice Y57
38 Seven thousand one hundred thirty-four more than Y33
39 A prime number
40 A prime number
41 X61 plus X16
44 Four times a prime number
46 Two hundred fifty-nine less than X44
47 A prime number
51 Mean of Y54 and Z10
52 Fifty-two times Z29
55 Same as X16
56 A prime number
58 Three times Y21
60 Rearranged digits of Z15
61 X41 minus X55

Y Direction

2 A prime number
3 Twenty-three times a prime number
7 Forty-five times a prime number
8 Sum of digits in Y57
13 Same as X56
18 Half of Y20, then subtract Z5
19 Fifty-eight times a prime number
20 Thirty-four times a prime number
21 Mean of Y54 and X51
22 Rearranged digits of Y33
32 Nine times a prime number
33 Three thousand seven hundred fifty more than Z5
34 Sixty-seven times X61
35 A prime number
36 Eleven times a prime number
41 Z3 plus Y22
42 Y7 plus Z22
43 Thirty-nine times a prime number
45 Fifty-seven times a prime number
49 Y53 divided by thirteen
52 Seven thousand six hundred thirty-eight more than Y41
53 Thirty-five times a prime number
54 A prime number
57 Ninety-one times a prime number
59 Mean of X51 and Z22

Z Direction

1 X47 minus X58
2 Six times a prime number
3 Four times a prime number
4 A prime number
5 Fifteen times a prime number
6 Twice Z27
7 Mean of Z22 and X12
8 Twenty-four times a prime number
9 Y52 minus X28
10 Seven times a prime number
11 A prime number
12 Thirteen thousand four hundred nineteen less than Y20
14 Twice a prime number
15 Mean of Z4 and Y54
16 Sixty-seven times a prime number
17 One thousand six hundred seventy-six more than Y22
22 X60 minus X5
23 A cube
24 Thirteen times a prime number
26 Three hundred thirty-four more than Z24
27 Fifty-two less than X41
29 X37 divided by seventy-nine
31 Twelve times a prime number
48 All digits are the same
50 Z15 divided by five

Solution: