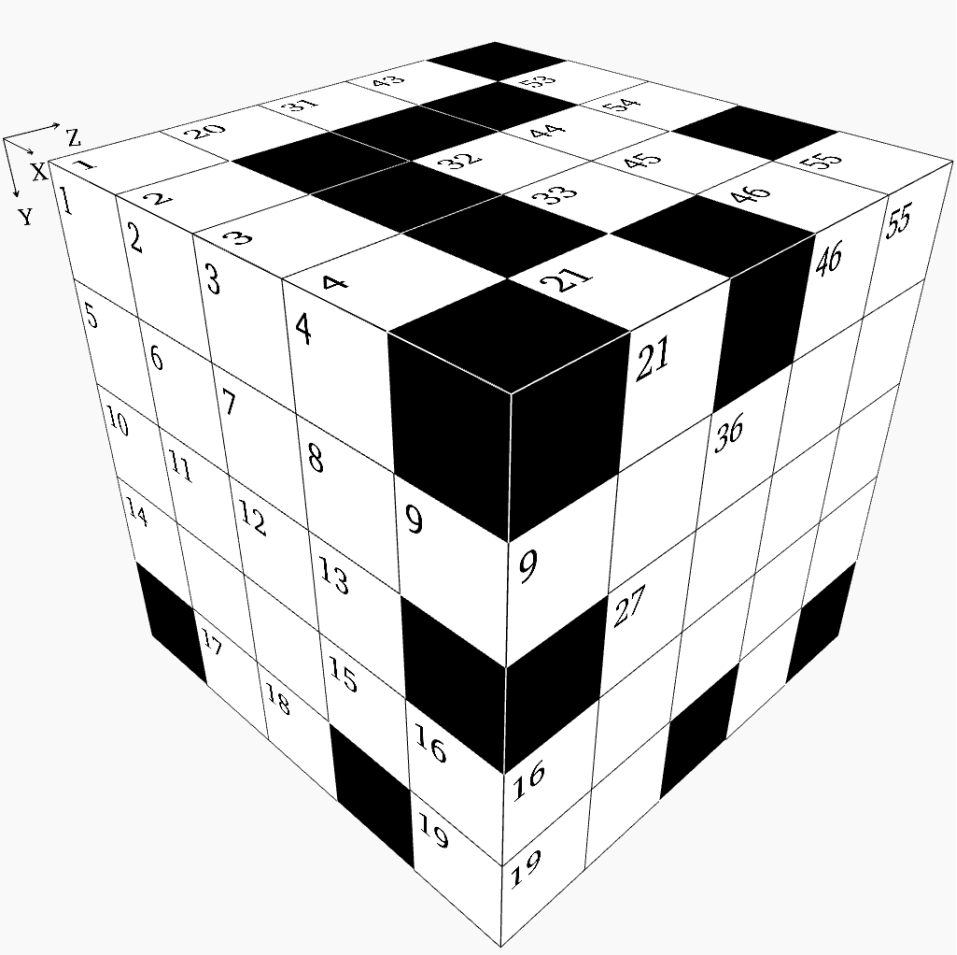
Difficulty: ★★★★☆

Cube - Hard Puzzle #4

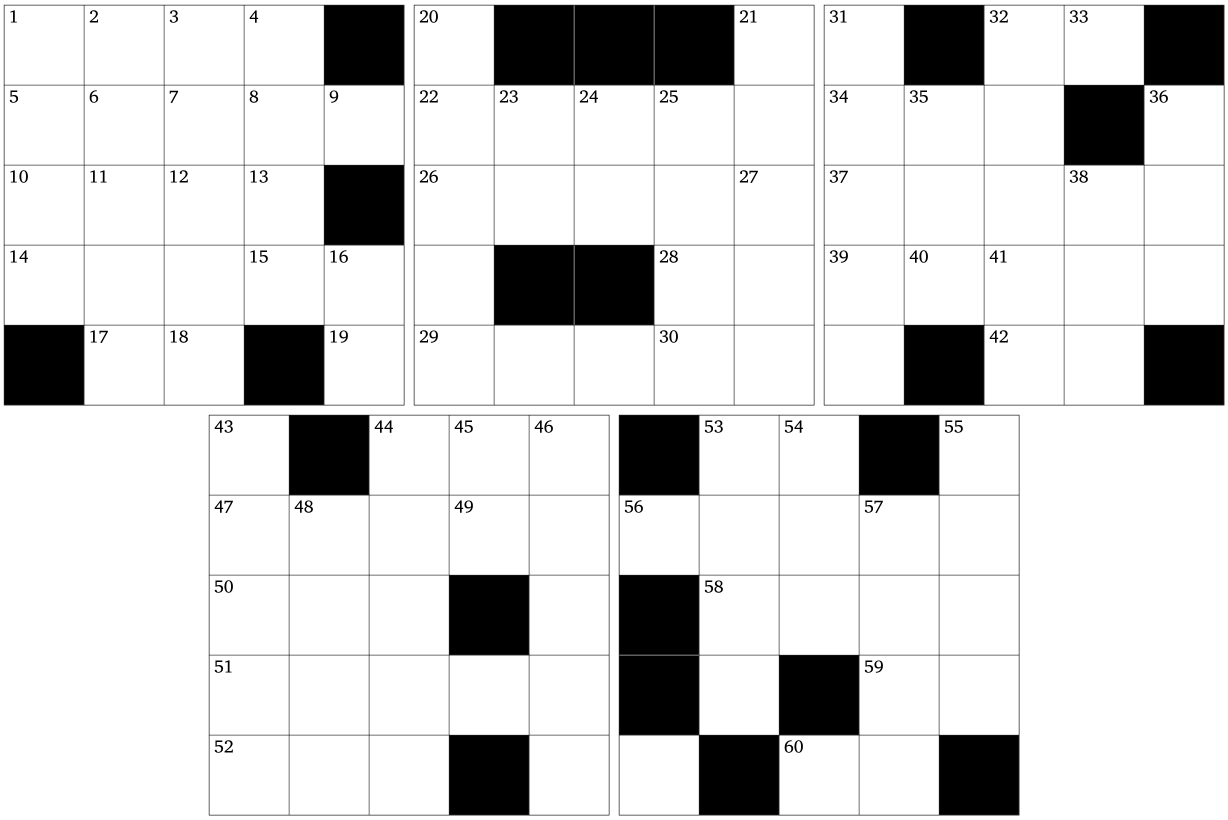


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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 Y55 minus Y16
5 Three times a prime number
10 Twice a prime number
14 Fourteen times a prime number
17 Z46 minus X60
22 A prime number
26 Twelve times a prime number
28 Six times Z33
29 Y36 times Z17
32 A square
34 Three times a prime number
37 Four thousand two hundred forty-two more than Y21
39 One thousand four hundred fifty less than Z15
42 Y24 plus Y23
44 Five times Y16
47 Ten thousand nine hundred seventy-four more than Y2
50 Twice a prime number
51 A prime number
52 Sixty-seven times X59
53 Z41 minus X59
56 Z18 plus half of Y53
58 Twenty-eight times a prime number
59 Z30 divided by three
60 Y24 minus Z17

Y Direction

1 Twice a prime number
2 Eleven thousand three hundred twenty-three more than Z18
3 A prime number
4 Three times a prime number
16 Mean of X32 and Z33
20 Eight times a prime number
21 Mean of Z9 and X42
23 X53 minus Z46
24 Mean of Z19 and Y16
25 Half of Y20, then subtract Y3
31 Mean of X5 and Y4
32 Three times a prime number
35 Z40 minus Y24
36 Thirteen times a prime number
38 All digits are the same
43 Y46 minus Y57
44 Last two digits are the same as X53
45 Twice the result of Z19 minus Z49
46 Three times a prime number
48 X29 divided by Z33
53 Eight times a prime number
54 Twice the result of Y35 minus X32
55 Y45 plus Z1
57 Twice a prime number

Z Direction

1 Y1 minus Z30
5 Twenty-four times a prime number
6 Sixteen times a prime number
7 Thirty-four times a prime number
8 Twice Z30
9 Five times a prime number
10 Three times a prime number
11 Twenty-two times a prime number
12 Eight thousand seven hundred sixteen less than Z5
13 Seven times a prime number
14 A prime number
15 A prime number
16 Half of Z7, then subtract Y23
17 A square
18 A prime number
19 X17 plus Y45
27 Y2 minus Z12
29 Z46 plus half of X10
30 Y16 minus X60
32 X50 plus X42
33 Y36 divided by Y16
40 Four times a prime number
41 Y38 minus X44
46 Mean of X32 and Z30
49 Mean of X17 and Z19

Solution: