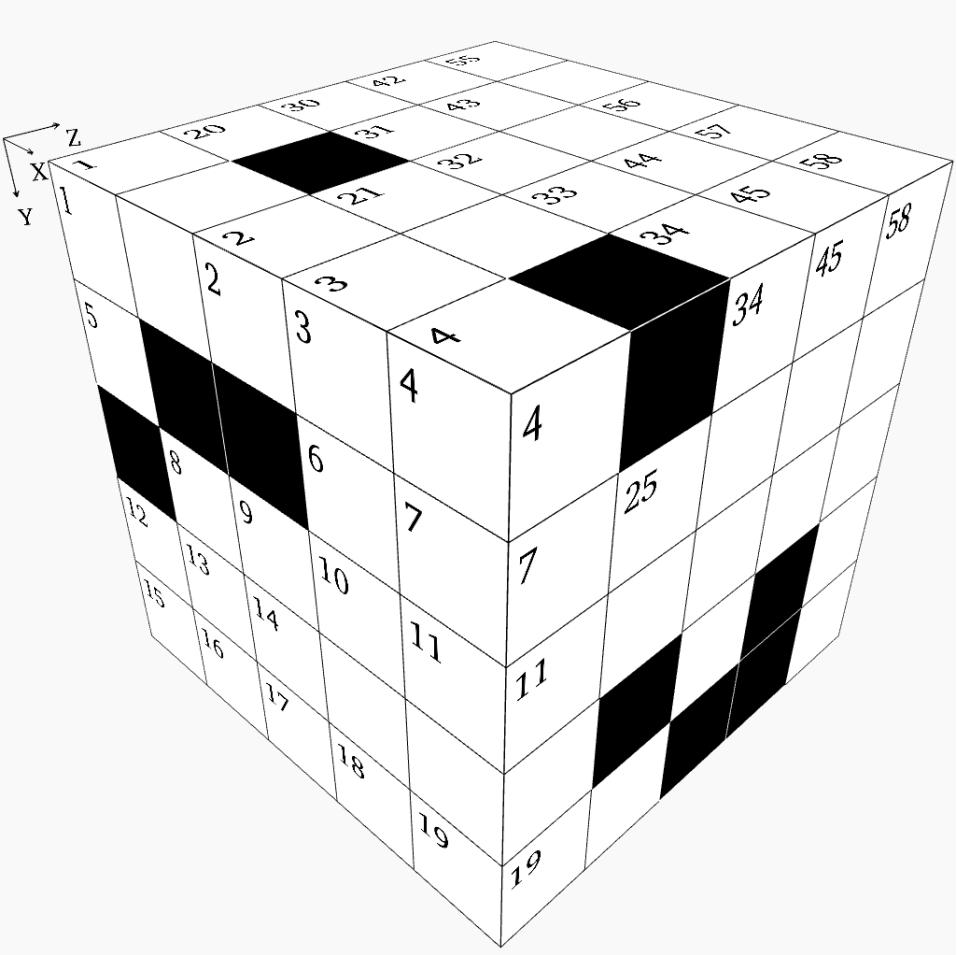
Difficulty: ★★★★☆

Cube - Hard Puzzle #49

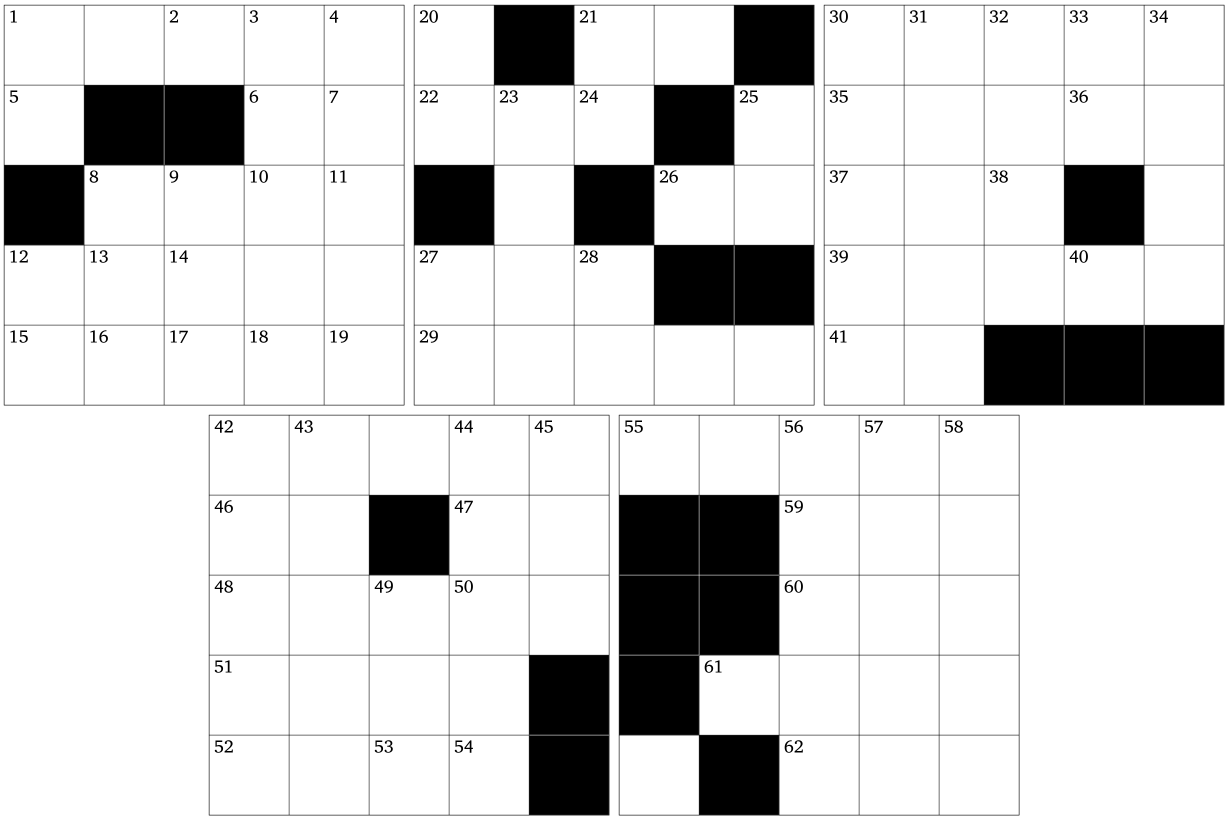


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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 Three thousand two hundred sixty-four more than X12
6 Mean of X46 and Z17
8 Seven hundred twenty-nine less than Z12
12 Twelve thousand eight hundred forty-one less than Y4
15 Z11 plus X8
21 Z50 plus Z24
22 Eighteen times a prime number
26 Z54 plus Y28
27 Z19 times Z54
29 Nineteen thousand six hundred fifteen less than X15
30 Y42 plus X47
35 Fifty-six times a prime number
37 A square
39 Z15 minus half of Y58
41 Y21 minus Z10
42 Last two digits are the same as last two digits of Z36
46 Y28 minus Y12
47 Mean of X21 and Y1
48 Three times a prime number
51 A prime number
52 Z7 minus Z3
55 Fifty-eight times a prime number
59 X55 minus Y56
60 Eighteen times Z54
61 Twice a prime number
62 A square

Y Direction

1 Mean of Z10 and Y20
3 Mean of Z14 and Z40
4 Nine thousand thirty-nine less than X55
8 Y45 minus Y27
9 Five times a prime number
12 Mean of X41 and Y20
20 Z50 plus Z19
21 Z50 plus Y27
23 Z37 plus Z8
25 Mean of X46 and X37
27 Z31 minus Z24
28 Y1 plus X46
30 Eight hundred six more than Y42
31 Mean of Y43 and X27
32 Fifty-six times X26
33 Mean of Y28 and Z53
34 Consecutive digits unordered
42 Fifty-eight times a square
43 Ten times a prime number
44 Thirteen thousand two hundred ninety-four more than Y57
45 A prime number
49 Nineteen times a square
56 Seven thousand two hundred eight less than X15
57 A prime number
58 Three thousand four hundred seventy-four more than Z13

Z Direction

1 X1 minus half of Y1
2 Mean of X48 and Z54
3 Four times a prime number
5 A prime number
7 Consecutive digits unordered
8 Twice the result of Z5 minus Y34
10 Mean of Y25 and Z50
11 Thirty-two times a prime number
12 X26 times Y25
13 Twice the result of Y30 minus Y20
14 First two digits are the same as X26
15 Twenty thousand seven hundred fifty-seven more than Y4
16 Z17 times Z18
17 Z38 minus Z31
18 X47 minus Y1
19 X26 minus Z10
23 Z19 plus half of X22
24 Mean of Y12 and X47
31 X26 plus X41
34 Y25 plus X62
36 X12 divided by Z38
37 X41 minus X6
38 Rearranged digits of Y49
40 Z36 plus Z17
50 Z37 plus Z54
53 Mean of Z37 and Z54
54 Z17 minus Y33

Solution: