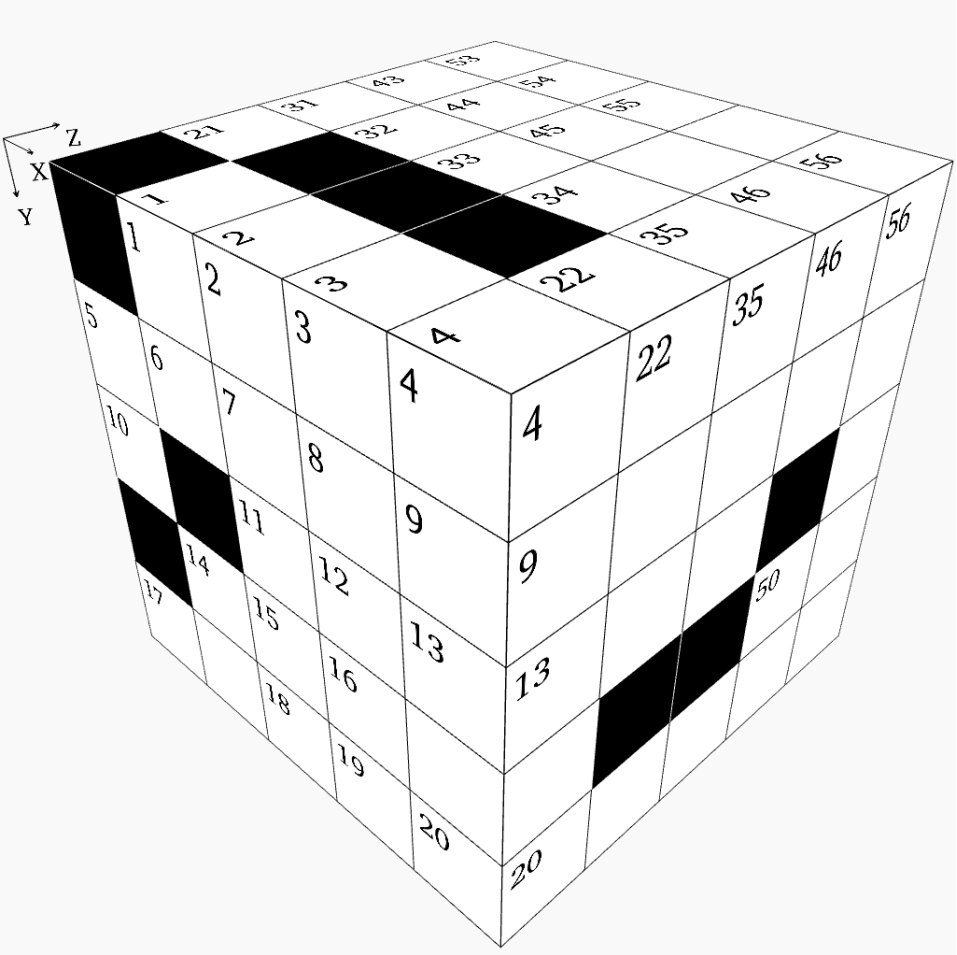
Difficulty: ★★★☆☆

Cube - Challenging Puzzle #5

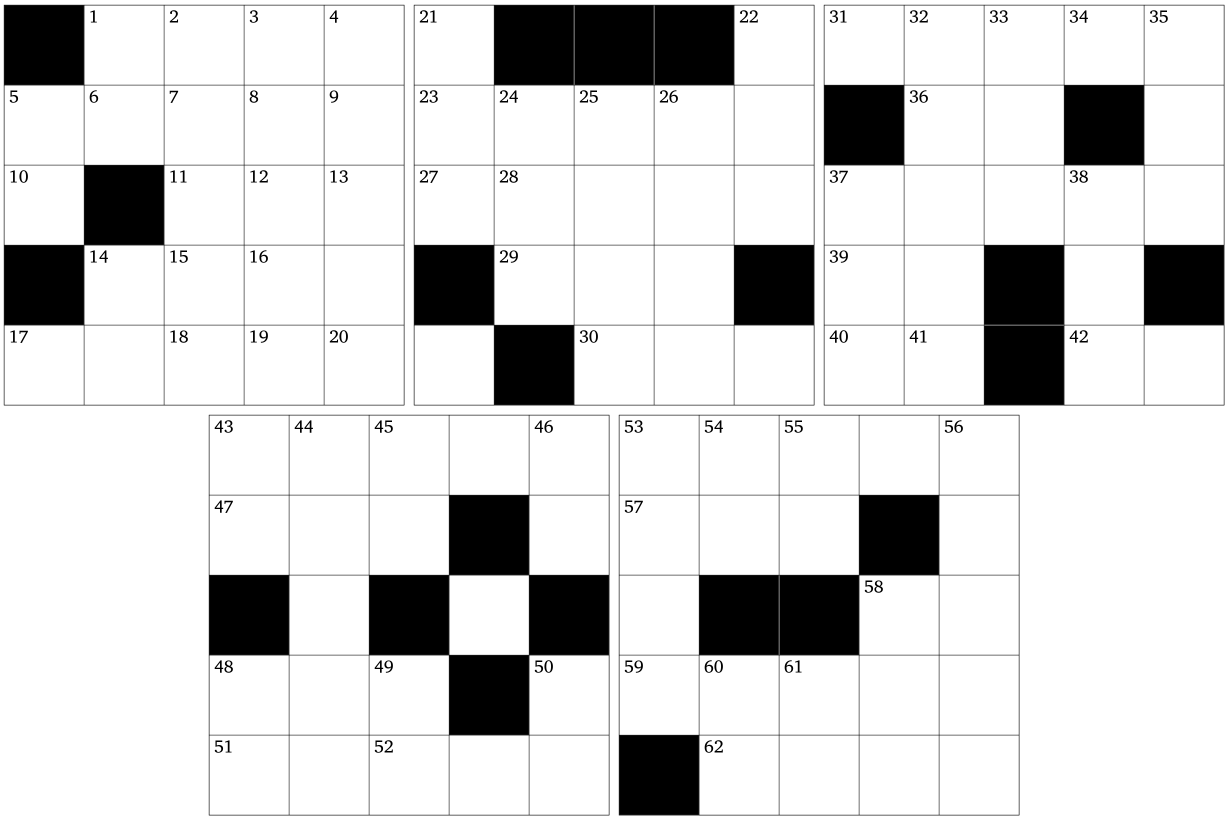


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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 Fifteen times a prime number
5 Six thousand nine hundred sixty-one less than Z20
11 Z5 plus Y22
14 Z9 minus half of Z19
17 Six times a prime number
23 A prime number
27 Four thousand three hundred ninety-five less than Z14
29 Twenty-two times X40
30 Twenty-one times X36
31 Twenty-seven times a prime number
36 Mean of Y49 and Z52
37 A prime number
39 Y44 divided by X48
40 X36 minus X58
42 Y54 minus Z50
43 Z32 times Z34
47 Consecutive digits in descending order
48 X29 plus Y60
51 Last two digits are the same as Y50
53 Forty-six times a prime number
57 Mean of Z28 and X30
58 Two-fifths of Y55
59 First two digits are the same as Z18
62 Five times a prime number

Y Direction

1 X58 plus Z52
2 Twenty-one times a prime number
3 Thirteen times a prime number
4 Z39 plus X31
5 X11 minus Y22
14 Y50 plus Y48
21 Twice a prime number
22 Y32 divided by Y60
24 Z20 minus Z14
25 X51 minus half of Z10
26 Y3 minus Z12
32 First two digits are the same as first two digits of Z13
33 X57 plus Y38
35 A square
37 Mean of Z32 and X30
38 Z33 minus Z39
43 Y45 minus X58
44 Eight thousand four hundred forty-five less than Y56
45 Twice the result of Y2 minus Z6
46 Z10 divided by thirty-four
48 Mean of Y60 and X39
49 A square
50 X48 divided by fifty-nine
53 X5 divided by Y50
54 Y48 plus Z50
55 Y24 minus X42
56 Y5 times X57
58 Y46 plus Y48
60 X59 divided by Y33
61 Mean of Y50 and X39

Z Direction

4 X17 minus X47
5 Y56 divided by X57
6 Twelve thousand one hundred fifty-one more than X59
7 Five times a prime number
8 Z28 minus Z5
9 A prime number
10 Thirty-four times Y1
11 Thirty-three times Z50
12 Forty-seven times a prime number
13 Mean of X47 and X40
14 Six thousand seven hundred five more than X59
15 X36 plus Y55
16 Z41 minus half of Z33
17 X1 plus Z21
18 Y56 divided by X57
19 Twelve thousand four hundred seventy-nine more than X37
20 Five thousand three hundred seventy-two less than Y2
21 Twice a prime number
28 A square
32 Y38 plus Y61
33 Mean of X30 and Z41
34 Mean of X58 and Z16
39 A prime number
41 Twice a prime number
47 Z5 minus Z50
49 Z8 plus X58
50 Z18 minus Z8
52 Z13 divided by Y61

Solution: