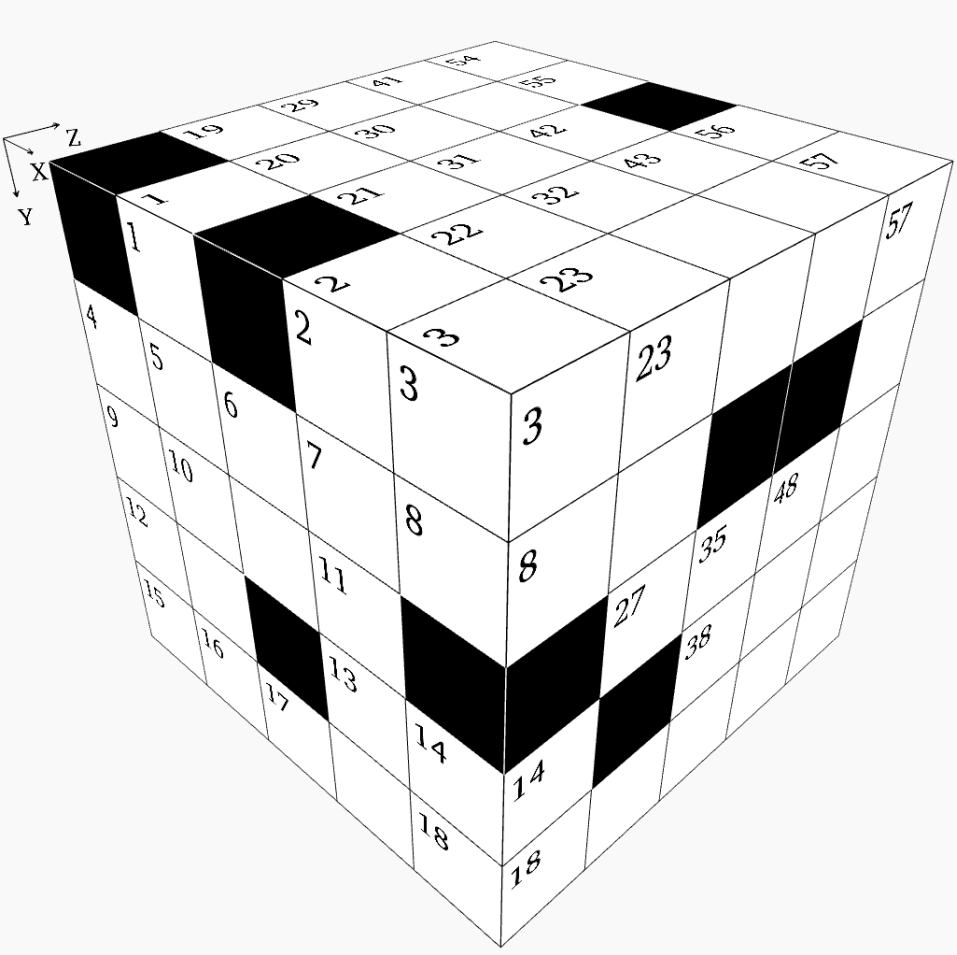
Difficulty: ★★★☆☆

Cube - Challenging Puzzle #39

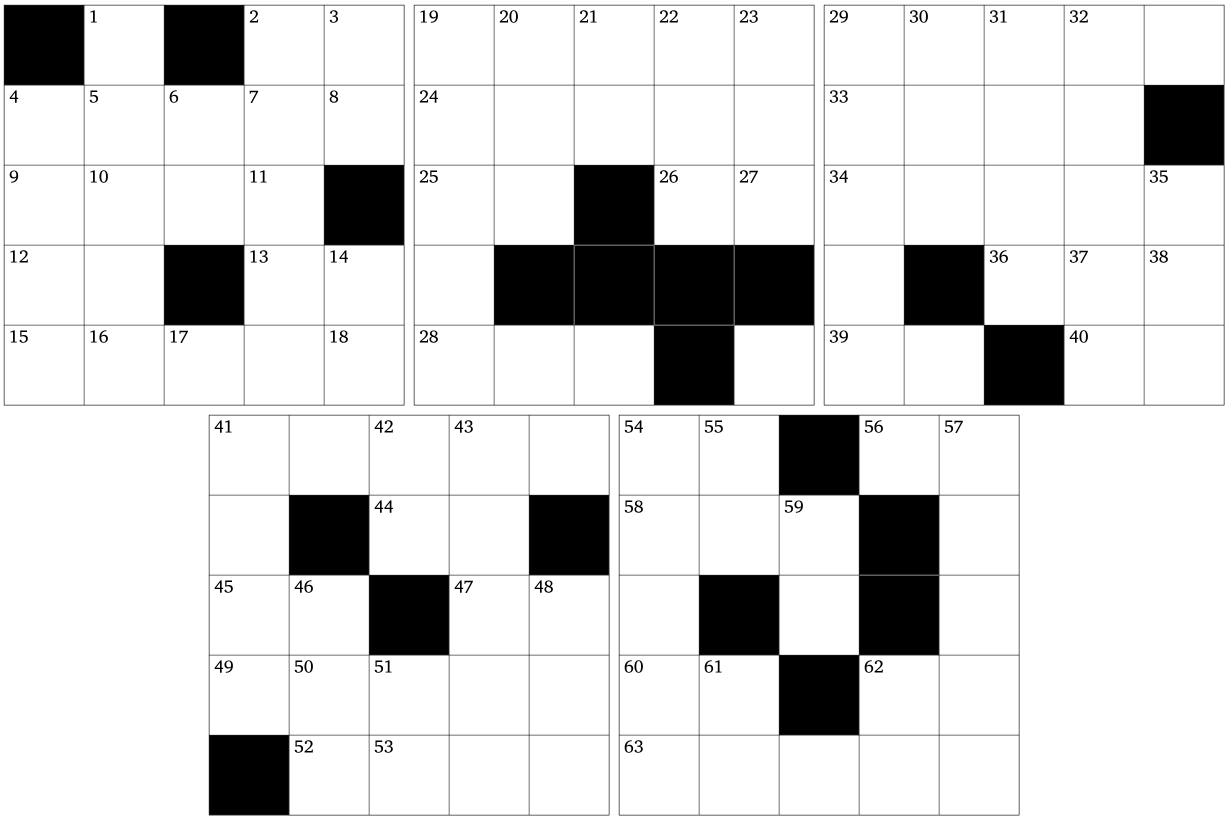


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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

2 Mean of Z36 and X56
4 Twice a prime number
9 Z37 times Y6
12 Y3 plus Z36
13 Y3 plus X40
15 Half of Y1, then subtract X12
19 Y54 plus X34
24 Seven times a prime number
25 X44 plus X56
26 Y21 plus Z8
28 Z9 divided by Z21
29 Half of Z18, then subtract Z27
33 Seven times a prime number
34 One thousand two hundred one more than Y29
36 A square
39 Twice the result of X44 plus Y55
40 Y35 divided by Y51
41 Three hundred twenty-nine more than X15
44 A square
45 Y21 plus X26
47 Y30 minus Z36
49 Last two digits are the same as last two digits of X34
52 Two thousand seven hundred thirty-two less than X29
54 X26 minus half of X13
56 Twice the result of X52 minus Z11
58 Z17 plus X44
60 Mean of X45 and Y21
62 X39 minus Y6
63 Twice the result of X49 plus Z8

Y Direction

1 Twenty-eight times a prime number
2 Eight hundred twenty less than Z2
3 A square
4 Mean of Z7 and X2
6 Y30 divided by Y55
14 Y61 minus Y21
19 One hundred seventy-nine more than X49
20 Z12 divided by Y48
21 Y3 minus Y62
22 Thirty-five times a prime number
23 X28 minus X45
29 Its digits total Z36
30 Z40 minus Y21
31 Six times a prime number
32 Three times a prime number
35 Same as Z38
41 Forty-two times Y62
42 Y48 divided by twenty-two
43 Last two digits are the same as last two digits of X41
46 X62 plus Y23
48 Seven times Y51
51 Z38 divided by X40
54 A prime number
55 X13 minus Y3
57 Twenty-one thousand six hundred seventy less than X63
59 A prime number
61 Y42 plus X62
62 X54 plus Z36

Z Direction

1 A prime number
2 Two thousand five hundred fifty-one more than X19
3 Four thousand three hundred sixty-eight less than Y57
4 A prime number
5 Fourteen times X26
6 X41 minus Y41
7 Sixty-eight times X39
8 Mean of Y51 and X44
9 Eighteen thousand seven hundred seventeen less than Y43
10 Five times a prime number
11 A prime number
12 Six thousand four hundred seventy more than X63
15 Y61 plus X47
16 Two thousand one hundred ninety-three less than X63
17 Y46 divided by six
18 Eight times a prime number
19 First two digits are the same as Z8
21 X26 plus X13
27 X52 plus X44
36 X40 plus X44
37 Y35 minus Y51
38 Fifteen times Y14
40 Y20 minus X45
50 Twice the result of X45 minus Y62
53 A square

Solution: