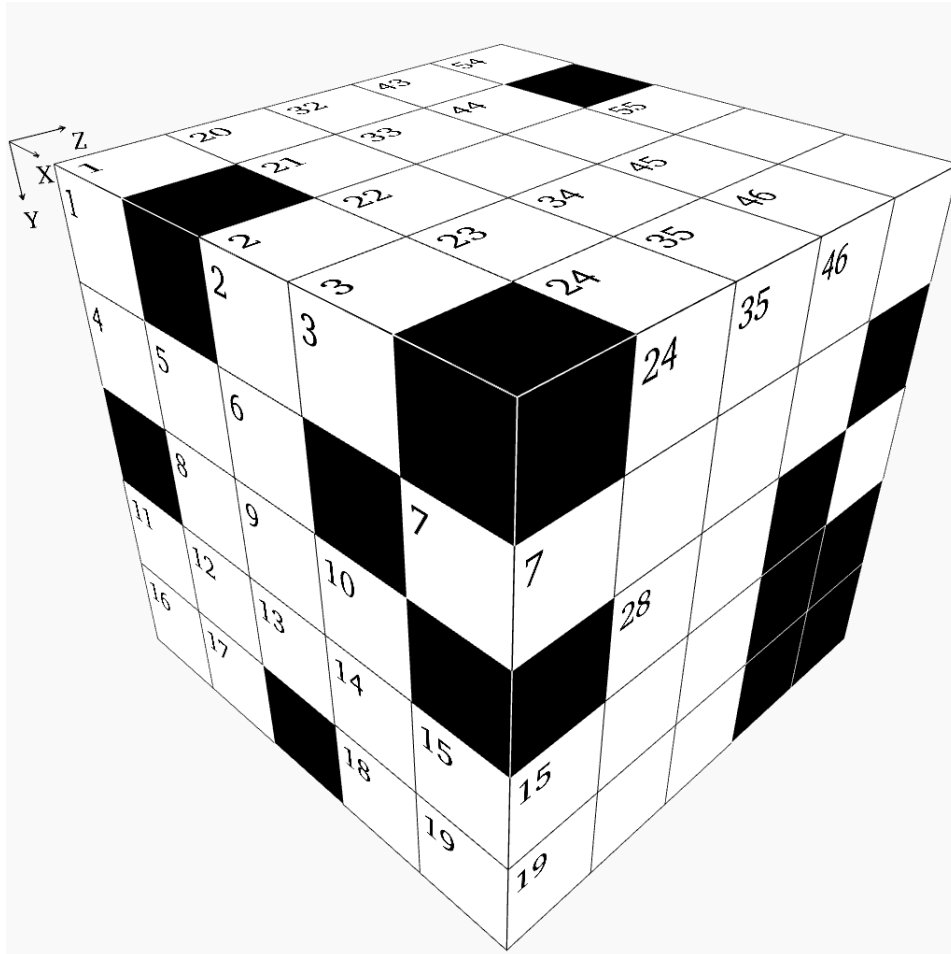Difficulty: ★★★☆☆

Cube - Challenging Puzzle #22

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 X60 minus Y55
4 X55 minus Z12
8 Y45 divided by Z9
11 Nineteen thousand one hundred ninety-eight more than Y34
16 X60 minus Y15
18 Mean of Z12 and X47
20 X11 minus Z36
25 X29 minus Y15
27 Z17 minus half of Z3
29 A prime number
30 X48 times Z6
32 Eight thousand fifty less than Y44
36 Mean of X49 and X16
37 X60 minus X2
38 Z13 plus Y39
41 Fourteen times a prime number
42 Eight thousand five hundred eleven less than Z2
43 Sixty-five times a prime number
47 Mean of X16 and X58
48 Mean of Z12 and X18
49 X60 minus X47
50 Fifty-three times a prime number
53 Y46 times Z12
55 Y43 divided by Z40
56 Eighteen times Y52
58 Mean of Y61 and X47
59 Its digits total Z51
60 X59 plus Y46
62 Four hundred eighty-eight more than X25

Y Direction

1 Twice the result of Z19 minus Y11
2 X53 minus Y1
5 Z7 minus Z27
10 Z42 plus Z15
11 Mean of X18 and X60
15 Three-fifths of X2
21 Ten thousand eight hundred fourteen less than Z18
22 A palindrome
23 Y52 plus Z10
24 Thirty times a prime number
32 Four times a prime number
33 Z40 plus X56
34 Twice a prime number
35 Mean of Z5 and Y10
39 Twenty-eight times X49
43 Seventeen thousand four hundred ninety-eight more than Z5
44 Three thousand nine hundred fifty-six less than Y45
45 Three thousand seven hundred fifty-five less than Z13
46 Z6 plus Z51
52 A square
54 Mean of Y21 and X42
55 Mean of X18 and Z12
57 Fifteen times a prime number
61 Z19 minus X59

Z Direction

1 Eighty-two times a prime number
2 Four thousand nine hundred forty-three more than Y44
3 Twice a prime number
5 Thirty-five times a prime number
6 X30 divided by Y55
7 Twenty-two times a square
8 Six thousand six hundred ninety-nine less than X38
9 Mean of X60 and Z40
10 Y23 minus half of Y46
12 Z40 minus X58
13 Twenty-five times a prime number
14 Twenty-three more than Y2
15 Twice the result of Z7 minus Z31
17 Mean of X49 and X20
18 Twice the result of Z8 plus Z28
19 Z40 minus Y52
21 Z2 divided by Z12
24 Half of Y34, then subtract X32
26 Z15 minus Y15
27 Four times a prime number
28 A square
31 Forty-one times a prime number
36 Y15 plus Z21
40 Y46 plus Z28
42 A prime number
51 Z28 minus X18

Solution: