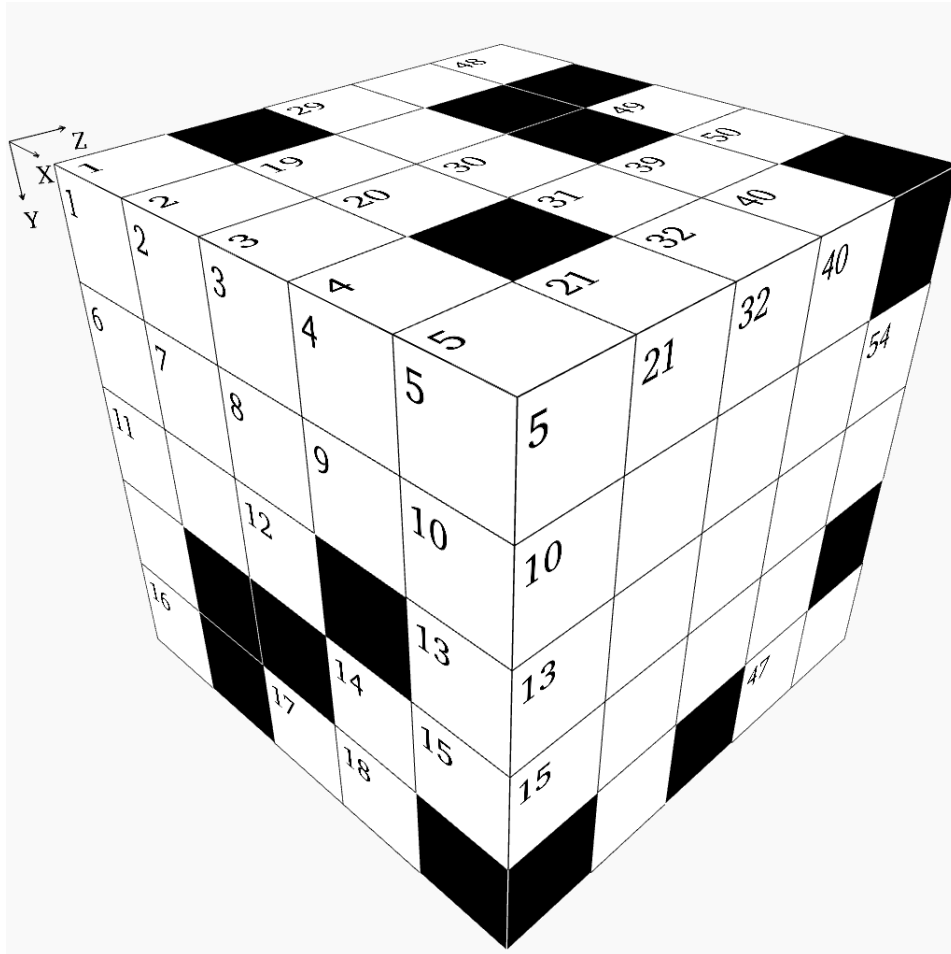# Cube - Challenging Puzzle #7

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 Y20 minus half of Z38
6 Two thousand one hundred twenty-four more than Z10
11 Half of Y35, then subtract Z26
14 Mean of Y54 and Z26
17 Same as Y54
19 A square
22 A prime number
24 Y1 divided by eighty-five
26 Mean of X58 and Z18
28 Twenty times X49
29 Y40 plus half of Y52
33 Y2 plus Y14
34 A prime number
36 A prime number
37 Three times Y54
39 Z47 minus Z46
41 Ninety-five times a square
43 Two thousand five hundred seventy-one less than X45
44 Eighteen times a prime number
45 Eighty-nine times a square
49 Y14 minus X51
51 All digits are the same
53 Z46 plus Y19
55 Twenty-four times a prime number
57 Eight times a prime number
58 Eight times a prime number

Y Direction

1 Eighteen thousand two hundred forty-four less than X34
2 Z9 divided by Y22
3 Y19 plus Z29
4 Y29 divided by X55
5 X33 plus Z6
14 X28 divided by five
19 X14 minus Y48
20 Eight times a prime number
21 Ten times a prime number
22 Y31 divided by fifty-one
23 Twelve times a prime number
29 Fifteen thousand one hundred twenty more than Y30
30 Seven hundred nine less than X36
31 Mean of X57 and Y14
32 Forty-three times a prime number
35 Eighty-two times X49
39 Y30 plus Y41
40 Sixteen thousand two hundred thirty-seven more than Y30
41 Z7 plus X51
42 Twice a prime number
48 X51 minus Z26
50 First two digits are the same as X19
52 Sixteen times a prime number
54 Z14 minus Y21
56 Mean of X14 and Z5

Z Direction

2 X24 plus Z6
3 Eight times a prime number
5 Ninety-one times X19
6 Z38 minus Z46
7 Y48 plus X19
8 Fifty-one times a square
9 Z47 times Y2
10 Seventy-one times a prime number
11 Thirty-seven times a square
12 A prime number
13 A square
14 X17 plus Y21
15 Twelve times a prime number
16 Y32 minus Z3
17 X43 plus X49
18 Mean of Z41 and X49
25 Ninety times X51
26 X28 divided by twenty-two
27 Mean of Z8 and Z29
29 X33 minus X44
31 A square
35 Y35 plus Y19
38 Twenty-two times X49
41 Mean of Y41 and Y54
46 Three times X19
47 Y31 divided by fifty-one

Solution: