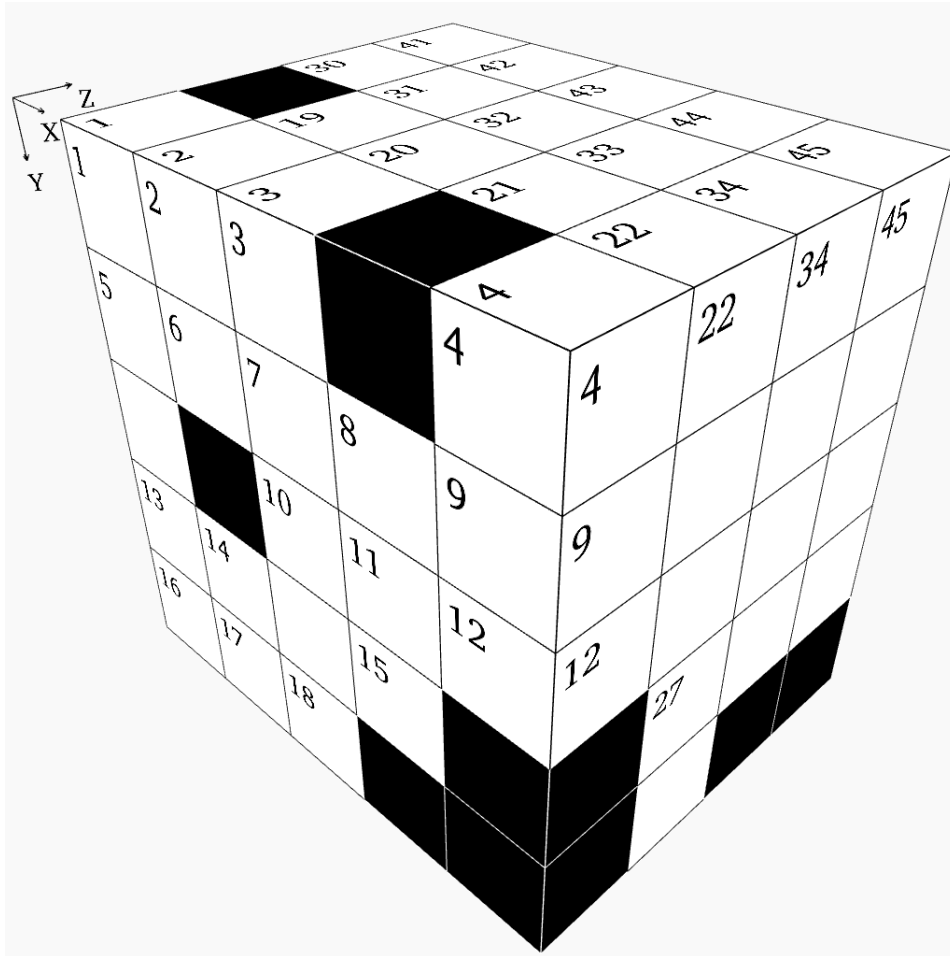# Box - Challenging Puzzle #32

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 box pictured above and divide it into individual X-Y layers, we will get these planes:

X Direction

1 Half of Y47, then subtract Z30
5 Thirty-nine times a prime number
10 X35 minus Z3
13 Rearranged digits of Z15
16 Rearranged digits of Z27
19 Sixty-two times a prime number
23 Thirteen times a prime number
24 X16 plus half of Y4
25 Z38 plus Z30
26 Z36 reversed
28 Twice a prime number
30 Half of Y22, then subtract Y43
35 Twenty-three times a prime number
36 A square
37 Three times a prime number
40 Mean of Y34 and Y45
41 Last two digits are the same as last two digits of Z4
46 Z12 minus X13
47 Y44 plus Z29
48 X24 minus Z21
49 Three-fourths of X26

Y Direction

1 Y21 plus Z2
2 Z29 minus Z5
3 Fifty-six times a prime number
4 X36 minus X1
8 Eight times a prime number
14 Three-fourths of X26
19 Seventeen thousand sixty-four more than X47
20 Y4 minus X25
21 Three times a prime number
22 First two digits are the same as Z5
25 Mean of Z11 and Z38
31 Four times a prime number
32 Twenty-two thousand one hundred twenty-nine less than X5
33 Mean of Z38 and Z5
34 Ninety-three times a prime number
39 Y42 divided by twenty-five
42 Z11 plus Y47
43 Seventy-five times a prime number
44 Twenty-three times a prime number
45 Nine more than X19
47 Z27 plus X49

Z Direction

2 Eighteen times Y4
3 A cube
4 Y45 minus Z7
5 X25 plus Y25
6 Twelve times a prime number
7 Thirty-two times a prime number
8 Mean of Z6 and X10
9 Four times a prime number
10 Half of Z7, then subtract Z13
11 Mean of Z24 and Z38
12 Six times a prime number
13 Twice Z38
14 X36 minus Z36
15 X28 minus half of Y19
16 Four times a prime number
17 A square
18 Eighty-five times a square
21 Mean of Z5 and X36
24 A cube
27 Y47 minus Y14
29 A prime number
30 X26 minus Y2
36 Z13 plus Y39
38 Sum of digits in Z5

3	4	9	■	2	■	9	2	3	8	2	6	6	5	7
8	8	6	4	7	9	2	3	3	9	■	9	6	3	7
1	■	3	7	6	■	1	1	1	4	6	2	5	■	1
3	5	7	2	■	4	5	■	7	6	■	8	1	3	9
9	7	6	■	■	4	8	8	1	4	8	4	8	3	■

8	8	1	7	9
■	2	8	4	2
7	5	0	9	4
5	■	7	5	7
4	■	5	7	■