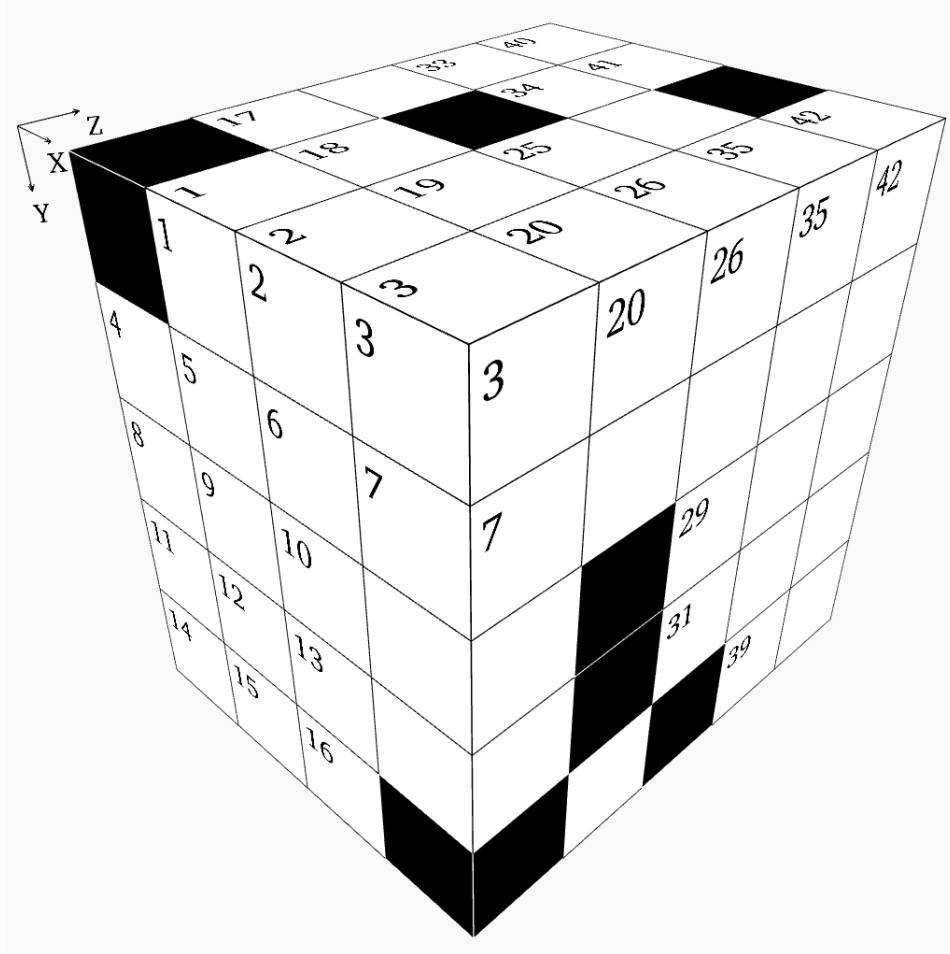# Box - Hard Puzzle #25

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 Eleven times a prime number
4 Twice a prime number
8 X24 plus Z6
11 Three times a prime number
14 Fifty-four times a prime number
17 Eighty-eight times a prime number
21 Mean of Z6 and X28
22 Thirteen times a prime number
23 Z31 minus X32
24 Four hundred eighty-one less than Y4
25 Three times a prime number
27 Three times a prime number
28 Y36 minus Z8
30 Forty-four times a prime number
32 Z1 plus Z6
33 Four times a prime number
36 Mean of Y26 and X4
37 Y34 divided by X8
38 Rearranged digits of X47
40 A prime number
43 Twice the result of X11 plus X25
45 A prime number
46 A prime number
47 Thirteen times a prime number

Y Direction

1 Nine times a prime number
2 Thirty-eight times a prime number
3 A prime number
4 Fifteen times a prime number
18 Nine thousand six hundred forty-one less than Y25
19 Eight thousand eight hundred sixty less than Z16
20 Z15 divided by Y27
22 Twice the result of X14 minus X21
25 Eighteen thousand eight hundred forty-eight more than Y42
26 Twelve times a prime number
27 Five times a prime number
34 X8 times Y20
35 Y44 plus half of Z14
36 X22 minus X23
40 Twelve thousand four hundred thirty-six less than Y18
41 X46 plus half of X17
42 Forty-seven times a prime number
44 Rearranged digits of Z17

Z Direction

1 Three times Z37
2 X47 plus X30
3 A palindrome
5 Twenty times a prime number
6 A prime number
7 Twelve times a prime number
8 A square
9 Ten times a prime number
10 A prime number
11 Twice Z39
12 Z16 plus X24
13 X40 plus Z11
14 Two thousand four hundred eighty-two more than Z12
15 X37 times Y27
16 Forty-six times a prime number
17 X45 plus X1
29 Y22 minus Y20
31 Eleven times a prime number
34 X38 divided by twenty-two
36 X8 divided by eighty-five
37 Twice a prime number
39 Consecutive digits in descending order

Solution:

	7	3	7	7	8	3	2	8		9	3
3	6	2	2		2	8	3		4	1	1
3	1	4	5	6	1	1			2	8	5
4	4	1	3	2	9	0			8	3	6
5	9	4		2	8	6	4	3	5	9	

1	7	7	2	6	1		7
	2		7	9	0	1	2
3	3	8	9	7	0	7	9
2	3		4	6	0	8	9
1	5	6	2	2	5	6	1