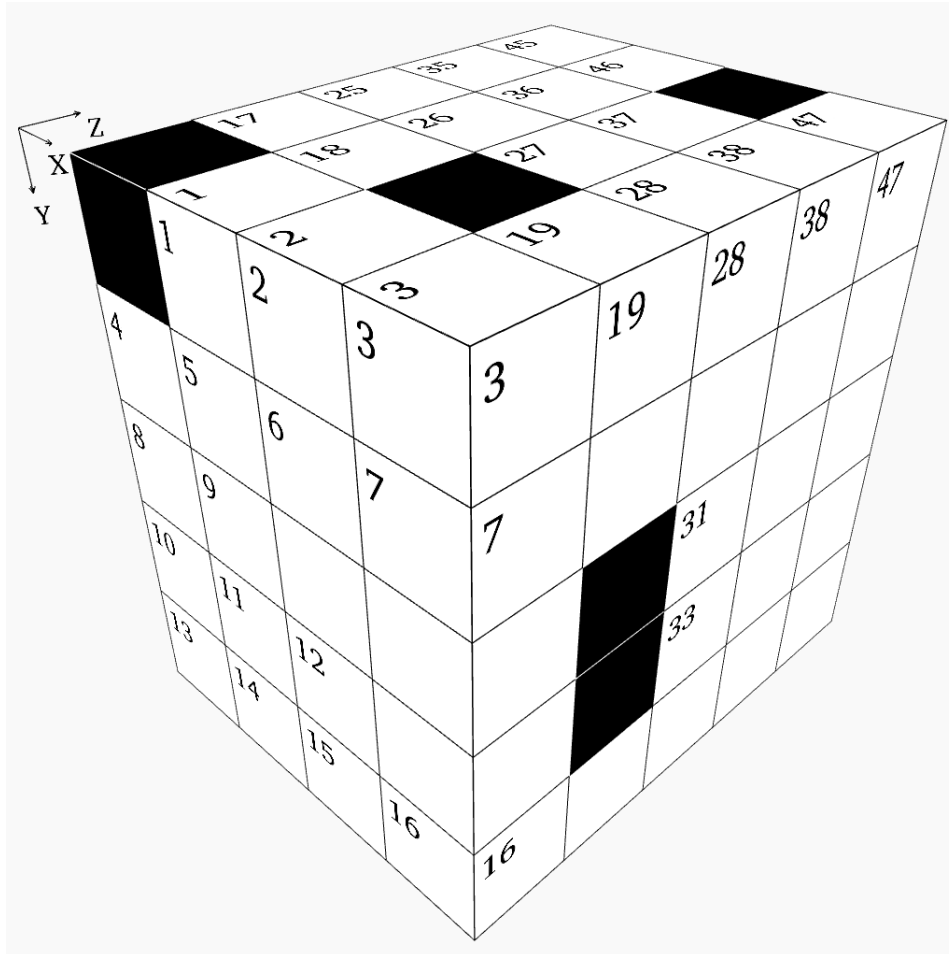# Box - Hard Puzzle #8

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 Seven times a prime number
4 Rearranged digits of X10
8 Twice a prime number
10 Consecutive digits unordered
13 A prime number
17 Z27 plus X45
20 Ninety-one times a prime number
21 Y45 plus Z41
22 Seventy-two times X45
24 X25 plus half of Z44
25 A prime number
29 Y26 times X17
30 X45 plus Y19
32 Four times a prime number
34 Z14 reversed
35 Four times a prime number
39 Z12 minus Z41
40 Z15 minus X42
42 A prime number
43 A square
45 Half of Z42, then subtract X21
48 Twelve times a prime number
49 Z10 minus Y45
50 Thirteen times a prime number

Y Direction

1 A prime number
2 Fifty-three times a prime number
3 Y18 minus Y25
4 X13 plus Y45
17 Three times a prime number
18 Twenty-one thousand four hundred ninety-two more than Z16
19 Mean of Y45 and Y23
23 Z10 minus Y19
25 Twelve times a prime number
26 Z9 plus Y23
27 A prime number
28 Y1 plus half of X43
35 Sixteen times a prime number
36 Fifteen times a prime number
37 Nine thousand six hundred eighteen more than Y35
38 First two digits are the same as first two digits of X50
45 X30 minus half of Z30
46 X10 plus X35
47 X1 plus half of Z6
49 Twice the result of Y4 minus X13

Z Direction

1 Seven thousand seven hundred eighty-four more than Z16
3 A prime number
4 Sixteen times a prime number
5 Consecutive digits unordered
6 Four times a prime number
7 Last two digits are the same as last two digits of Z15
8 A prime number
9 Y49 plus Z10
10 X20 divided by X34
11 Mean of Z7 and X8
12 Thirty-nine times a prime number
13 Its digits total Y19
14 Mean of Y19 and Z41
15 Two hundred twenty-six less than Y46
16 Seven times a prime number
17 Eleven times a prime number
27 Mean of Z9 and X34
30 Mean of Z14 and Z10
31 Y19 times Z44
33 Twenty-four times a prime number
41 Mean of Y49 and Y45
42 Z27 plus Y45
44 Mean of X17 and X45

Solution:

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

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