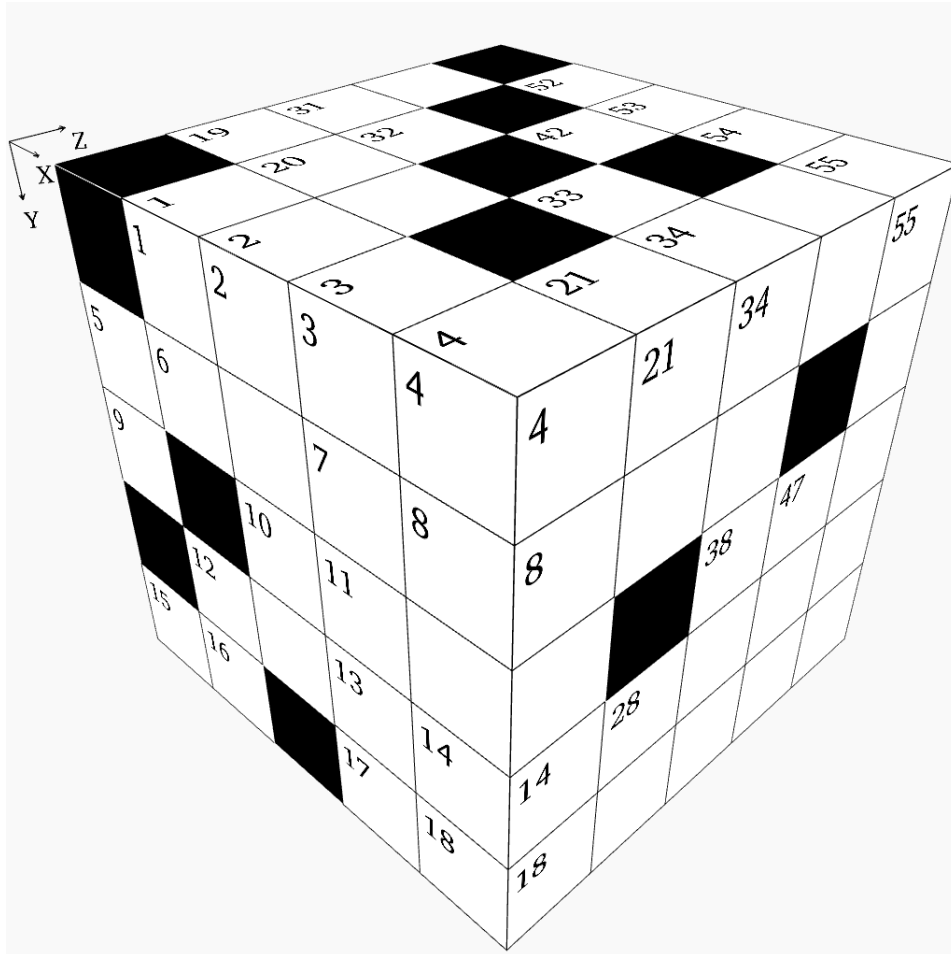# Cube - Hard Puzzle #22

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
1 X39 divided by Z2
5 Twice a prime number
10 X15 plus Z10
12 A prime number
15 Y12 minus Y50
17 X60 minus Z36
19 Twice the result of X35 minus Y19
22 Y21 minus Y5
23 Twice the result of Z15 minus Z6
24 Mean of Y49 and Y50
25 X31 plus X24
27 Half of Y26, then subtract X15
29 Nineteen thousand one hundred sixteen more than Y19
31 Y39 minus Y20
33 Y3 divided by Y2
35 Seventeen thousand two hundred forty-two more than X39
37 A prime number
39 X1 times Z42
41 Sixty-seven times a prime number
43 X51 plus X60
46 Y21 minus X59
48 Twenty-eight times a prime number
51 X22 plus X58
52 Three times a prime number
56 Y33 plus Y56
57 X27 plus Y26
58 A square
59 X27 plus Y1
60 A square

Y Direction
1 X57 minus Y28
2 Fifty-seven times Y1
3 Y2 times X27
4 Z9 plus half of X48
5 X57 minus Y1
12 Y31 plus Y50
19 Eighty-nine times a prime number
20 Y31 plus Y49
21 Y28 plus X46
23 Twice the result of Y32 minus X41
26 Y50 minus Z2
28 Mean of X27 and X57
31 X46 minus Y49
32 Two thousand nine hundred twenty-eight less than X39
33 Mean of Y4 and Y21
34 Nine times a prime number
36 Fifty-three times a prime number
39 X31 plus X46
42 Z45 minus Z42
44 Z19 minus X57
45 Mean of Z10 and Y5
47 A prime number
49 Z45 minus X31
50 Two-thirds of X51
52 Mean of Z25 and X60
53 Y12 minus X15
54 Mean of Z10 and Y42
55 Fifty-two times a prime number
56 Twenty-six times a prime number

Z Direction
1 Mean of Z8 and Y49
2 Y53 minus Y26
4 Y45 times X58
5 Y45 plus X17
6 Fifteen times a prime number
7 A prime number
8 Thirty-six times Z42
9 Mean of X58 and Y42
10 X43 minus X46
11 First two digits are the same as first two digits of Z19
12 Twenty-three thousand one hundred eighty-seven more than X35
13 Seven times a prime number
14 A prime number
15 Five thousand three hundred twenty-six less than Y3
16 Twenty-two times a prime number
17 Eleven times Y53
18 Twenty-eight times a prime number
19 Y42 plus X43
25 Fifty-eight times a prime number
30 Y56 minus Z45
36 Thirty-five times X27
38 Y26 plus Y47
40 X39 divided by X1
42 Twice the result of Y39 minus Y5
45 Y42 plus Z2

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

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