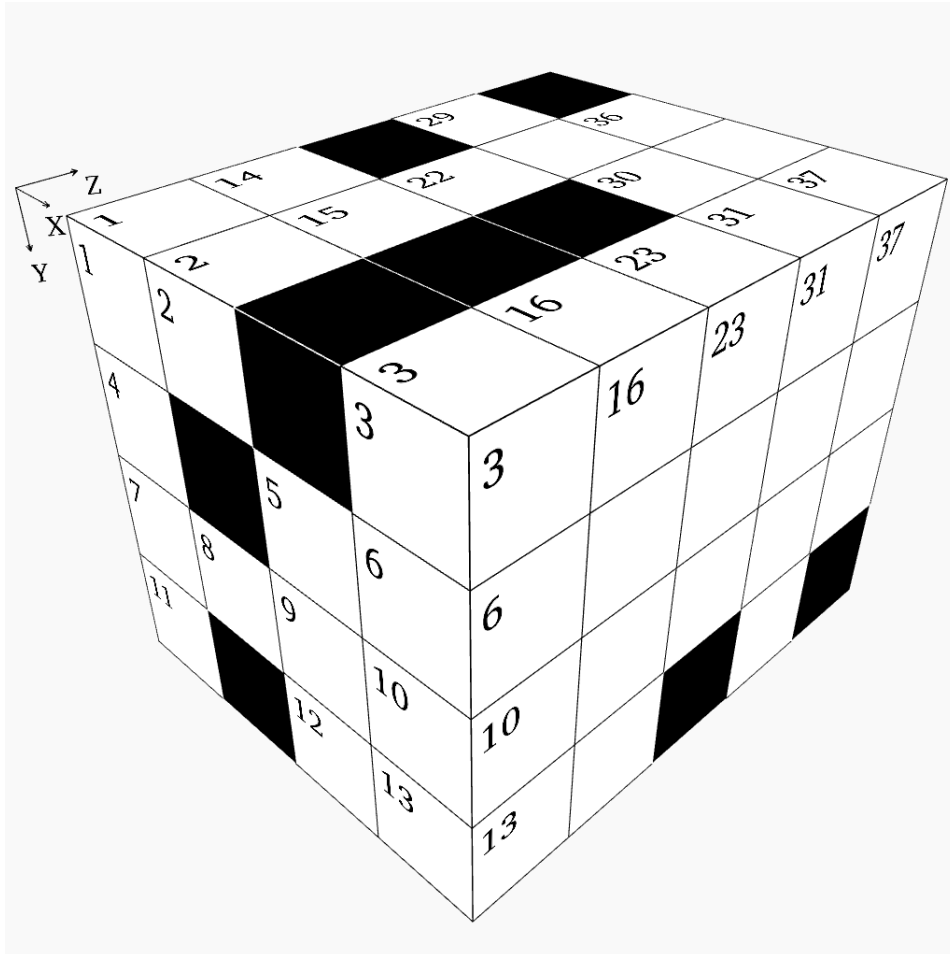# Box - Challenging Puzzle #23

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 Twice the result of Y5 minus Y34
5 A square
7 A prime number
12 Y14 divided by Y23
14 Z1 reversed
17 Three times a prime number
20 Twenty-seven times a prime number
21 Y33 minus X38
24 Y5 minus Z28
25 Thirteen times X12
27 Y22 minus Z28
29 X17 minus half of Y14
32 Seventy-five times a prime number
35 Twenty-seven times a prime number
36 A prime number
38 X35 divided by X36
39 Four times a prime number

Y Direction

1 Sixty-eight times Y5
3 Y37 times Z28
5 Y33 plus X24
14 Rearranged digits of Y1
15 Z18 times Z30
16 Four times a prime number
19 Mean of X14 and Y38
22 Y33 plus X27
23 Y1 divided by Y40
26 Y40 minus X14
29 Mean of X39 and Y14
31 Z8 minus Y16
33 Z13 plus X38
34 Mean of Y19 and X12
36 A prime number
37 Y3 divided by Y33
38 Z32 times Z18
40 Mean of Y37 and Z13

Z Direction

1 Z28 plus Z18
2 Thirty-one times a prime number
3 Three thousand nine hundred eighty-two less than Z2
4 Z12 plus X24
5 Z32 minus Z18
6 Three times a prime number
7 Mean of X24 and Y40
8 Three times a prime number
9 Twice a prime number
10 Mean of Z9 and X14
12 Four times a prime number
13 Mean of Z30 and Z5
18 Z1 minus Y33
28 Mean of Y26 and Y23
30 A square
32 Y23 minus Z30

Solution:

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