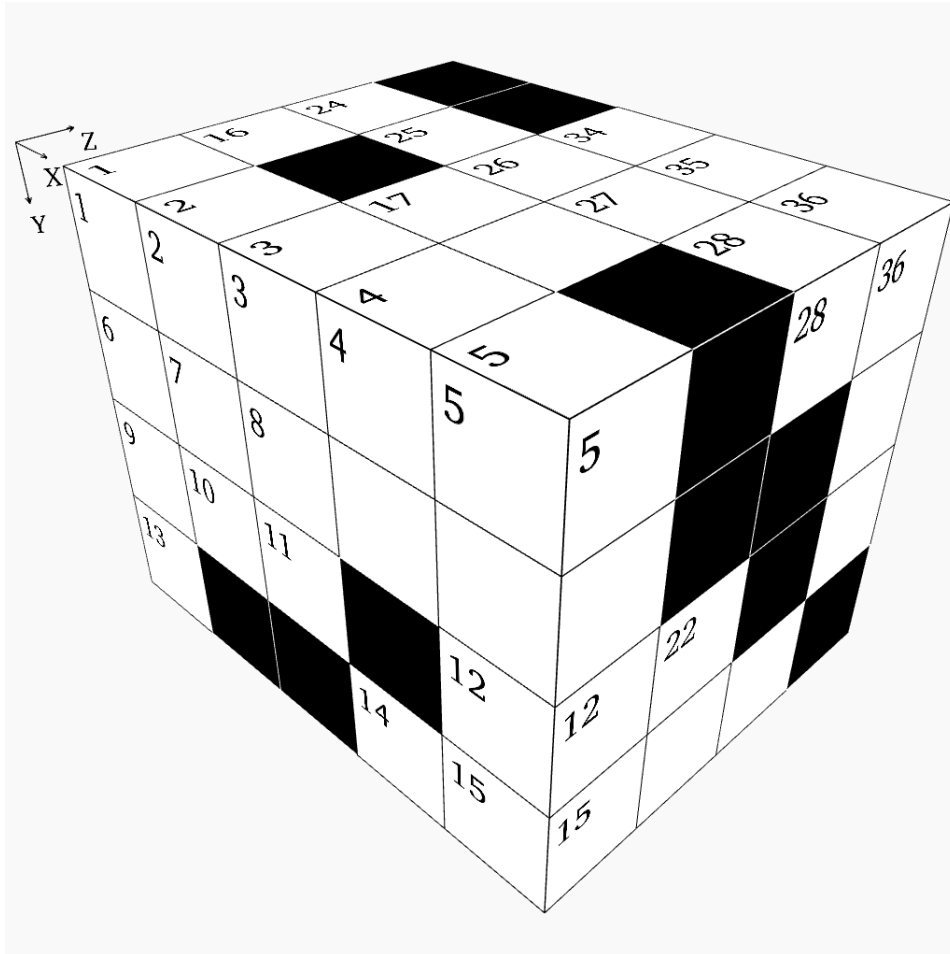# Box - Challenging Puzzle #41

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 Fifty-eight times a prime number
6 Two thousand five hundred thirty-three less than X1
9 Z9 minus Y26
14 Mean of Y4 and Z32
17 Mean of Y40 and Y21
18 Y24 minus Y4
20 A prime number
23 A square
24 Its digits total Z28
29 Two hundred forty-seven less than Y26
31 Mean of Y4 and X41
32 Ninety times a prime number
34 Mean of Y36 and Y22
38 Y40 plus Z1
39 Three times a prime number
41 Mean of Z14 and Z32

Y Direction

1 Z6 minus half of Y24
2 Z15 minus half of Z7
3 Sixteen times a prime number
4 Z1 minus X23
5 Ninety-six times a prime number
16 Z10 plus Y19
17 Its digits total Z30
19 Three-fifths of Z1
21 All digits are the same
22 Mean of X17 and X23
24 Forty-four times a prime number
25 Fifty-one times a prime number
26 Ninety-two times a prime number
27 Thirty-seven times a prime number
34 Seven hundred nine less than Y35
35 X20 minus Z3
36 X38 plus Z15
37 Mean of Z1 and Y19
40 Two-fifths of Z33

Z Direction

1 Z32 plus X17
3 Seventeen times a prime number
4 X6 minus half of Y5
6 Rearranged digits of Y27
7 Ten times a prime number
8 Three times a prime number
9 Sixty-two times a prime number
10 A prime number
11 Twenty times a prime number
12 Y4 reversed
13 Mean of Z32 and Z30
14 Seventy-eight times a prime number
15 X18 minus Y21
21 Y34 minus X31
28 A square
30 Y4 minus Z13
32 Twice Z12
33 Y17 minus Y36

Solution:

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