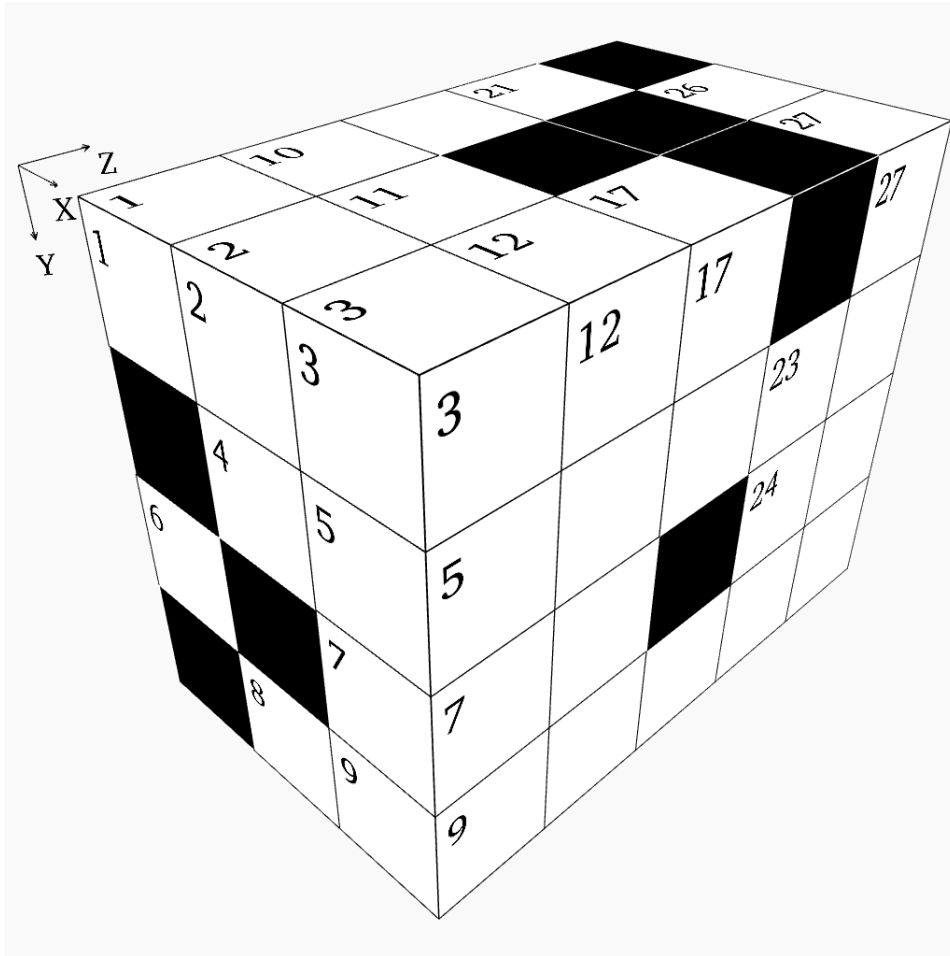# Box - Challenging Puzzle #71

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 Z16 minus X13
4 A square
8 X26 plus X4
10 A prime number
13 A prime number
14 Twice the result of Z4 minus Y3
16 Mean of Y12 and Y28
18 Two-thirds of Z15
19 Mean of Y28 and Z24
20 A prime number
22 Mean of X20 and X1
25 Nine times a prime number
26 A square
28 Mean of X25 and X8

Y Direction

2 Mean of Z22 and Y26
3 A prime number
10 Twenty-nine times a prime number
11 Twice the result of Z1 minus X20
12 Three times a prime number
17 A square
18 Z24 plus Z2
19 Twice the result of Y18 minus Y26
21 Twice a prime number
23 A prime number
26 Mean of Y17 and Y18
27 Y21 minus Y12
28 X8 minus Z22

Z Direction

1 Thirty-three times Y2
2 Mean of Z22 and Z7
3 X25 plus Y28
4 Z8 plus X10
5 Z6 plus half of Y17
6 Forty-one times a prime number
7 Y2 plus Z15
8 Thirty-one times a prime number
9 Four thousand four hundred ninety more than Z5
15 Y17 minus Y28
16 Fifty-two times a prime number
22 Mean of Z7 and X4
24 Mean of Y17 and X18

Solution:

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