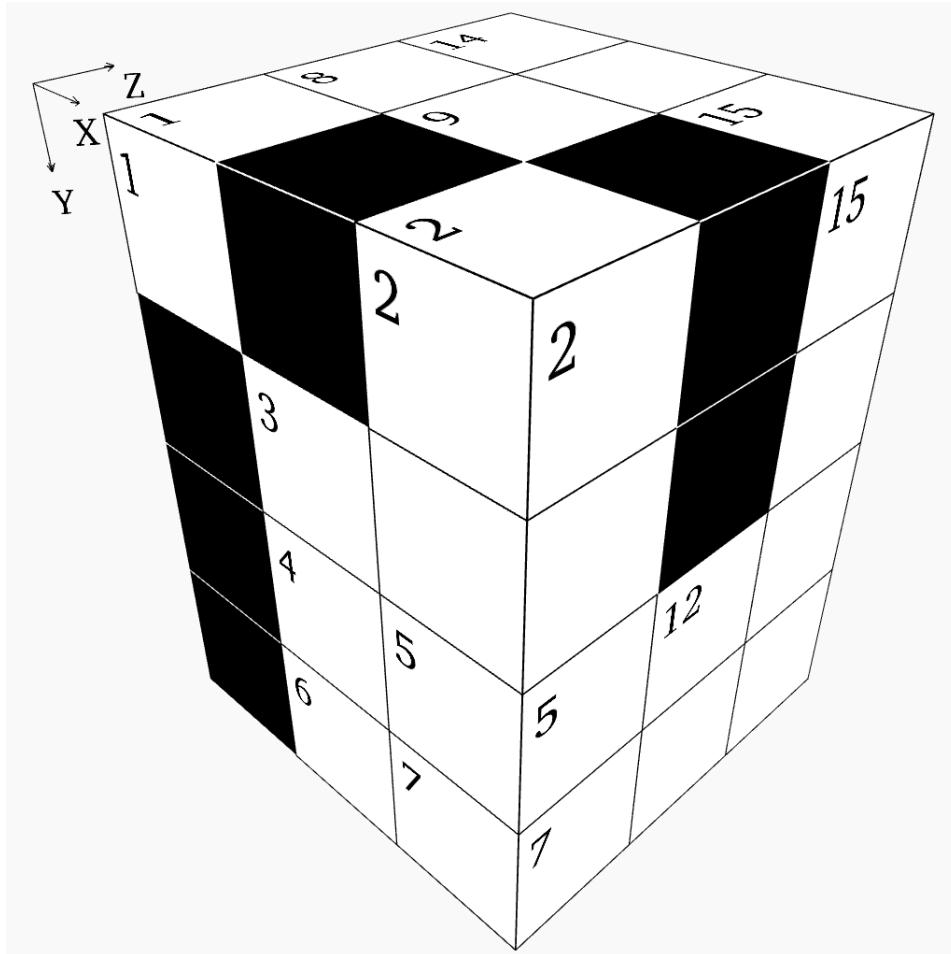# Box - Intermediate Puzzle #52

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:

1	■	2
■	3	
■	4	5
■	6	7

8	9	■
10		■
■	11	12
■	13	

14		15
	■	
16	17	
18		

X Direction

3 X13 minus X4
4 X18 minus Z4
6 Z9 minus Z3
8 Z1 divided by forty-eight
10 Y8 reversed
11 Mean of Z3 and Y17
13 Consecutive digits in descending order
14 Mean of Z6 and X13
16 Z6 plus Z3
18 Forty-two times a square

Y Direction

2 Thirty-seven times a prime number
3 Z1 minus X18
8 A square
9 Four times a prime number
12 Y3 minus Z6
14 A prime number
15 One thousand two hundred sixty less than Y9
17 Y2 divided by X10

Z Direction

1 Fifty-seven times Y8
3 Z9 minus Y12
4 Z10 plus half of Z5
5 Z6 plus X10
6 Y3 minus X6
7 Twice a prime number
9 X10 plus Y17
10 Mean of Z3 and X13

Solution:

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