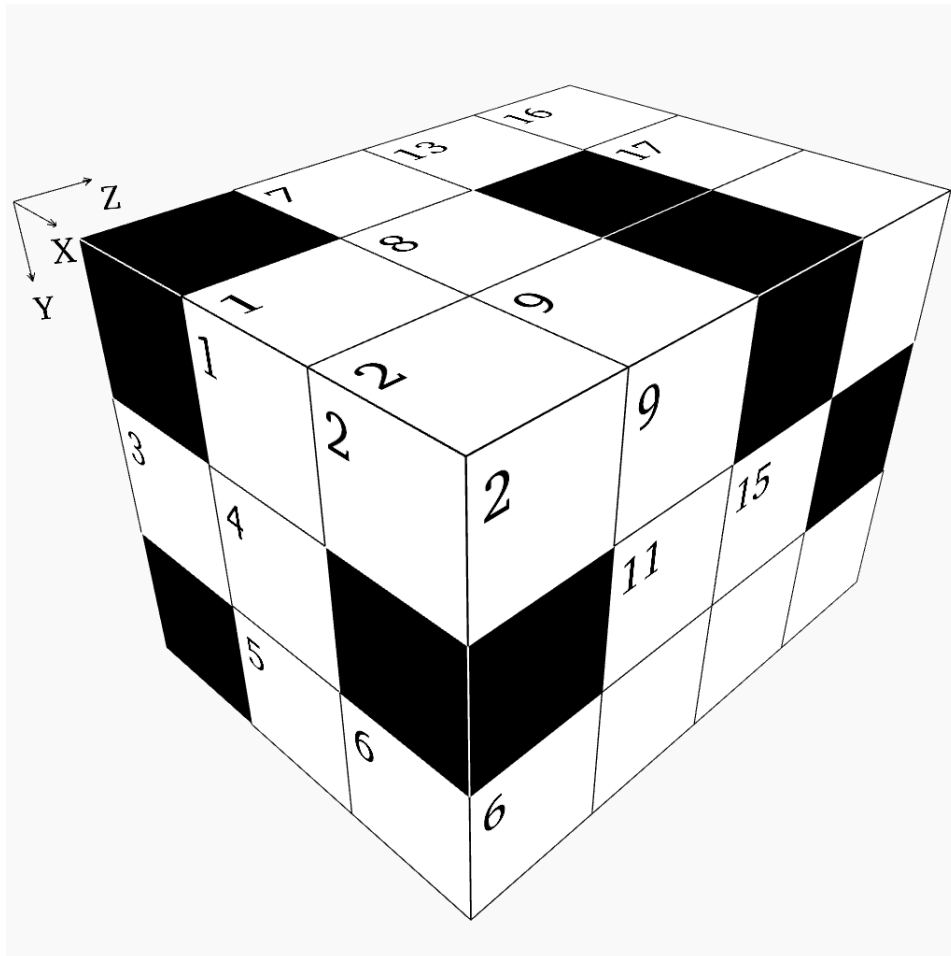# Box - Intermediate Puzzle #33

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		■
19		

X Direction
1 A square
3 A prime number
5 Sum of digits in Z4
7 Half of Y9, then subtract Z12
10 Mean of Y13 and Y8
14 Y15 times X5
16 Six times a prime number
18 X7 divided by four
19 A prime number

Y Direction
1 Y16 plus half of X16
7 Y17 minus X10
8 X3 minus half of Y15
9 Forty-two times X5
13 Mean of Y17 and Y7
15 All digits are the same
16 Consecutive digits unordered
17 Y13 plus half of X10

Z Direction
1 Twice a prime number
2 Three-fourths of X1
3 Five times a prime number
4 Thirty-nine times a prime number
6 Twenty-nine times a prime number
7 Y1 divided by three
11 X14 divided by eleven
12 Consecutive digits unordered

Solution:

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