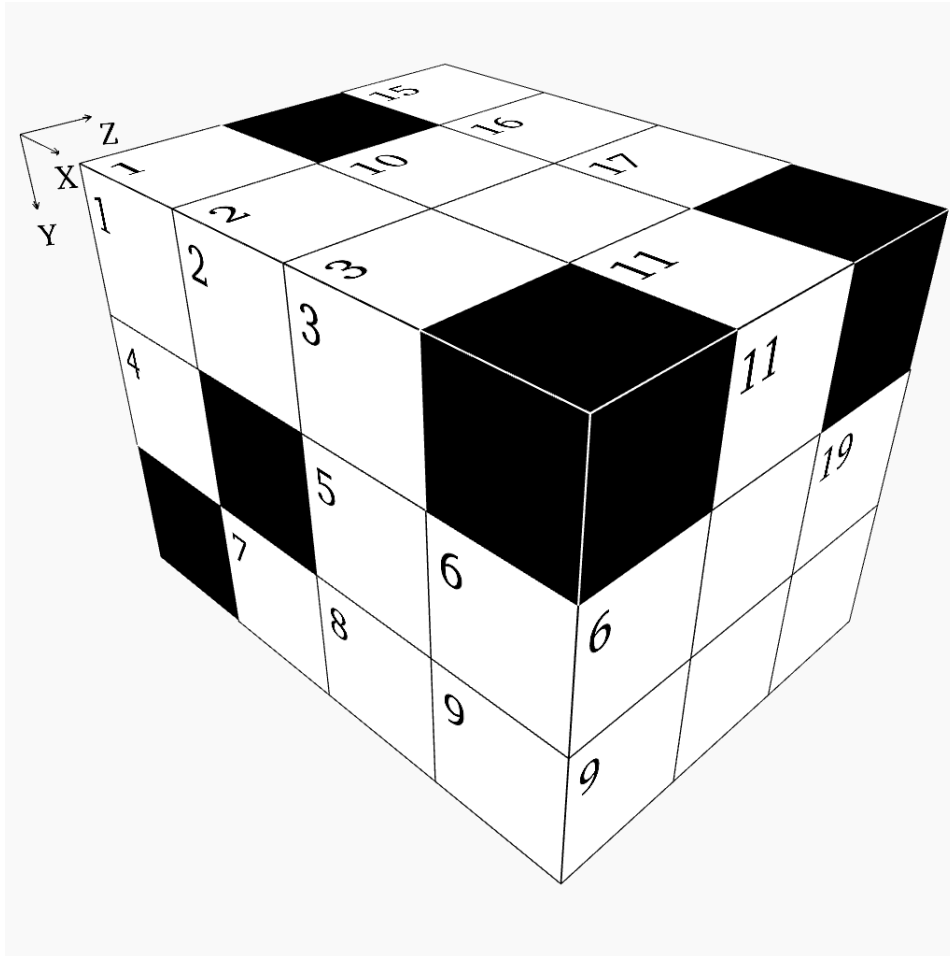# Box - Intermediate Puzzle #34

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
20			

X Direction
1 Z3 reversed
5 Y16 minus half of Z13
7 Z13 plus Z7
10 Twice the result of X15 plus Z14
12 Mean of Y1 and Y12
14 Y17 plus Z8
15 Thirty-five times a square
18 Sixteen times a prime number
20 Twenty-six times a prime number

Y Direction
1 A prime number
3 Nine times a prime number
6 X18 divided by X1
10 Fourteen less than X10
11 Mean of Z13 and X14
12 Mean of Y19 and Y6
15 Twice a prime number
16 X12 plus Y12
17 Five times a square
19 Z7 minus Y11

Z Direction
2 Z9 plus X12
3 X15 plus Z13
4 Seven times a prime number
6 Four times a prime number
7 Six times a square
8 Twice Z3
9 Y17 plus Y16
13 Y17 divided by ten
14 X5 reversed

Solution:

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