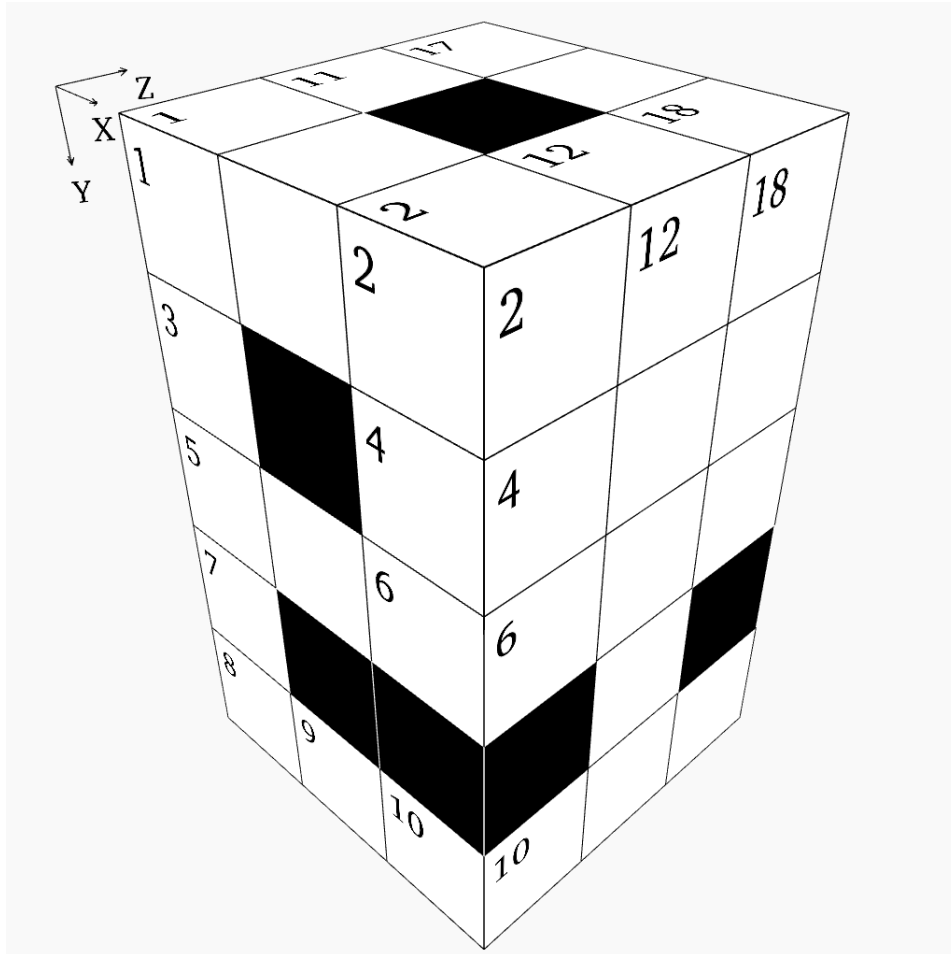Difficulty: ★★☆☆☆

Box - Challenging Puzzle #19

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 Twice the result of X17 plus Z2
5 Five times a prime number
8 Y18 minus X20
13 X5 plus Z6
14 Mean of Z1 and Z9
16 Seventeen times a prime number
17 Two-fifths of X5
19 Two hundred five less than X13
20 Forty-four times a prime number

Y Direction

1 Six times a prime number
2 Rearranged digits of X1
11 Nine times a prime number
12 Last three digits are the same as Z1
15 Twice the result of Z8 minus Y2
17 Last two digits are the same as last two digits of X5
18 Forty-four times a prime number

Z Direction

1 Z7 plus half of X14
2 Four times a prime number
3 Consecutive digits unordered
4 Z9 plus half of Z10
5 X19 minus half of Z3
6 Twice a prime number
7 A prime number
8 Five times a prime number
9 A prime number
10 Four times a prime number

Solution:

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