Cube - Intermediate Puzzle #11
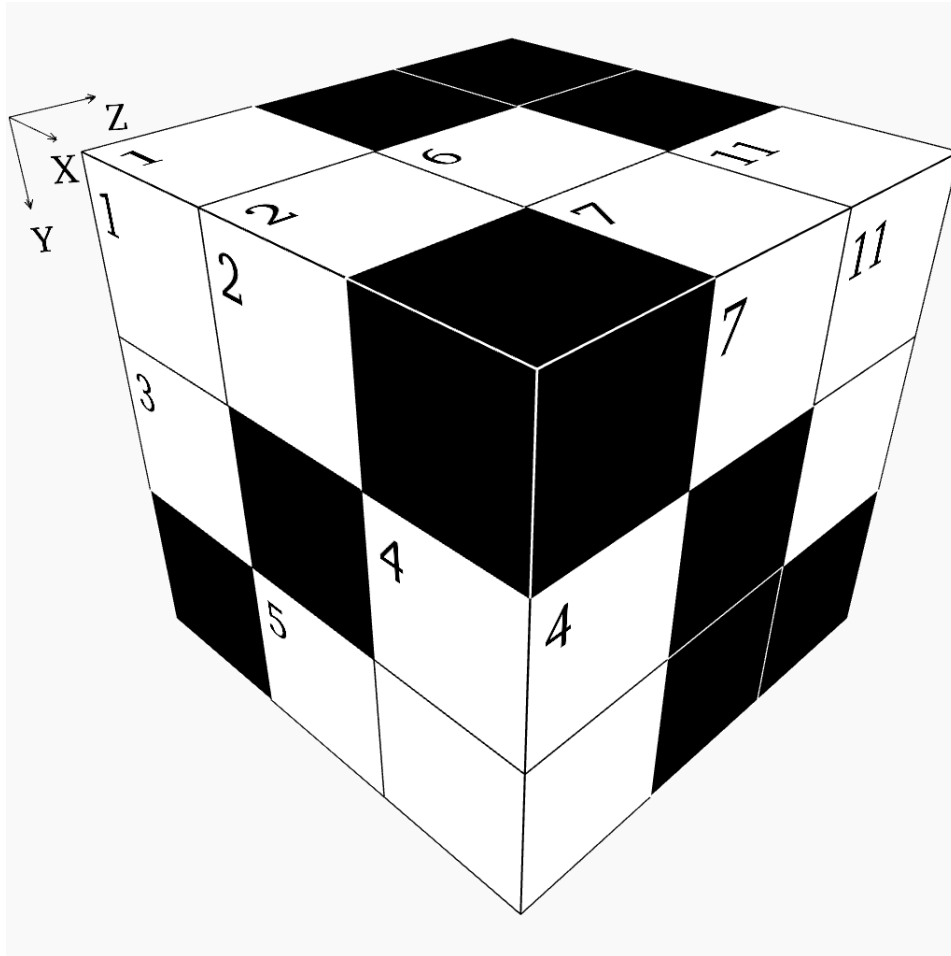

This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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 cube 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		■

X Direction

1 Mean of X6 and Z7
5 Z9 minus Z7
6 X5 plus X10
8 Mean of Z2 and X6
10 Mean of Z10 and X1
12 X6 plus Y13
14 Mean of Z5 and Y13

Y Direction

1 X5 plus Z7
4 Z9 minus Y13
6 Last two digits are the same as Y1
8 Mean of Y11 and X10
11 Twice the result of X12 minus X1
12 Y11 minus X1
13 Y8 minus Z7

Z Direction

2 Mean of Z5 and Y13
3 A prime number
5 Y8 plus half of X10
7 X6 minus half of Y1
9 Twice the result of X14 minus Y4
10 Three times Y13

Solution:

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