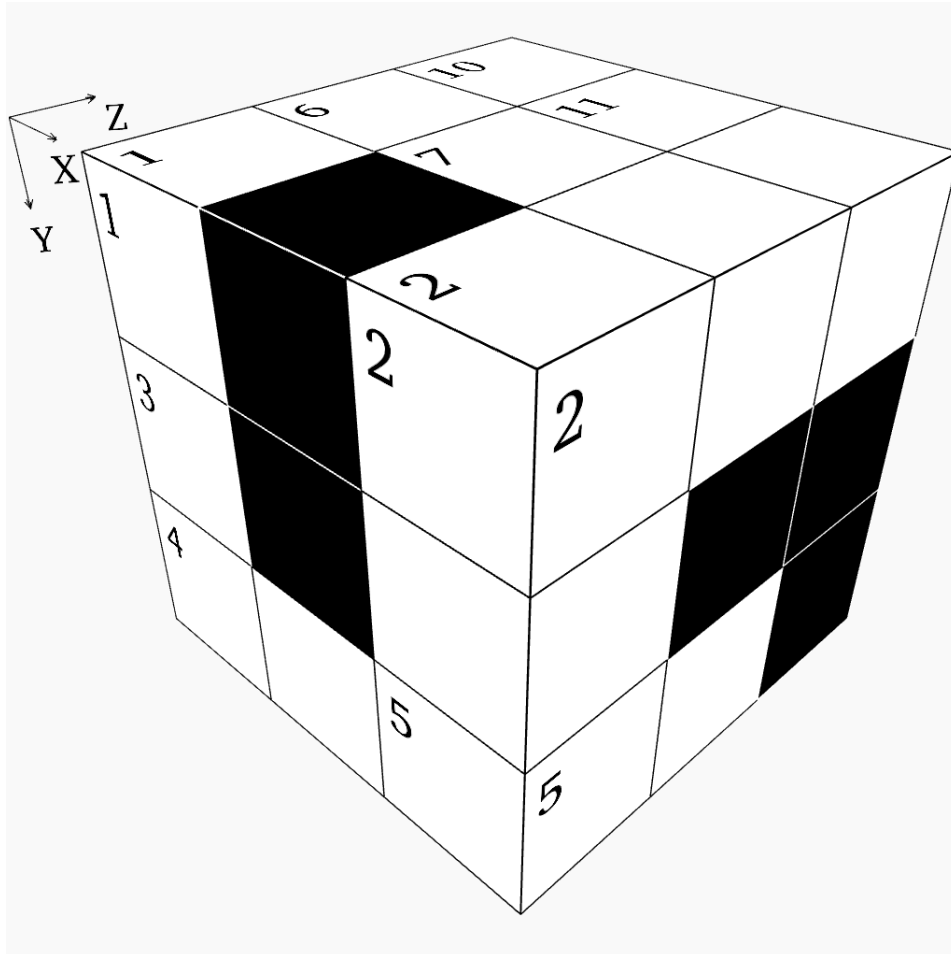# Cube - Intermediate Puzzle #22

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		■

X Direction

4 Eleven times a prime number
6 Four times a prime number
8 A square
10 Half of Y11, then subtract Y6
12 Z1 minus X8

Y Direction

1 Twice the result of Z4 minus X4
2 X6 minus Z5
6 Thirteen times a prime number
7 A prime number
11 Eight times a prime number

Z Direction

1 A square
2 Three times a prime number
3 Half of Z7
4 A prime number
5 A prime number
7 All digits are the same
9 A prime number

Solution:

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