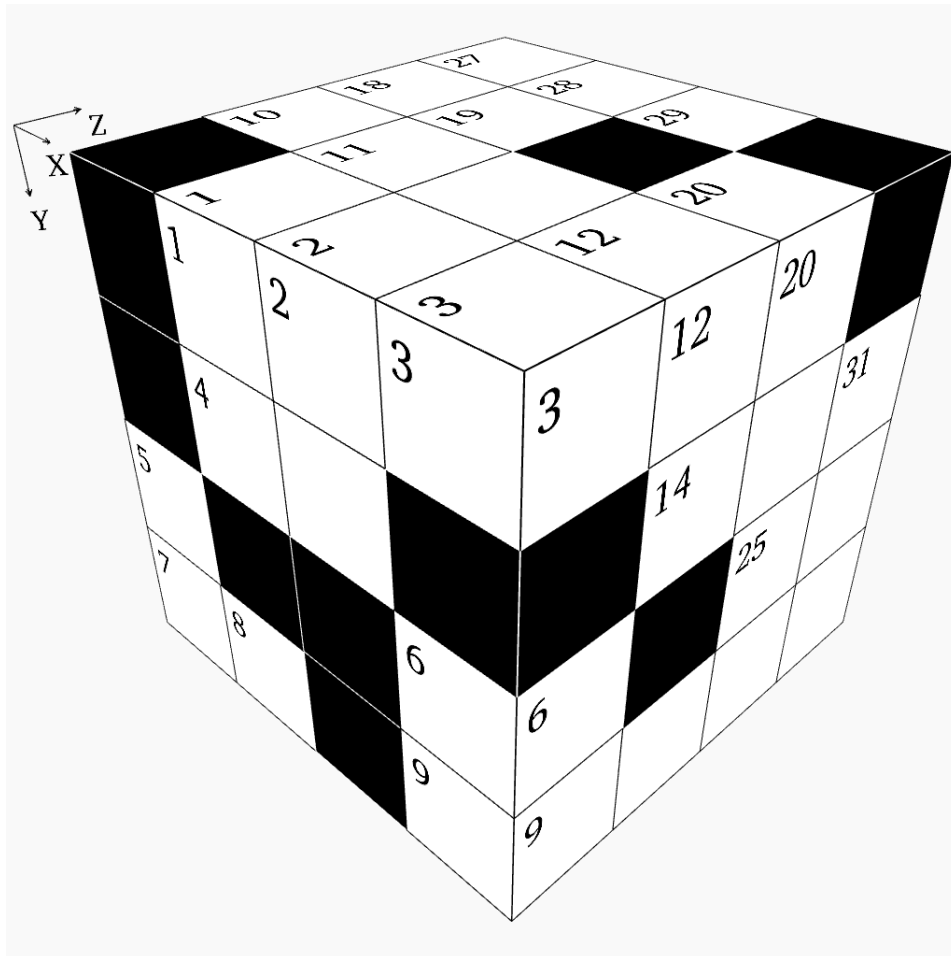# Cube - Intermediate Puzzle #30

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:

X Direction
1 A prime number
4 Z9 divided by Y12
7 Same as Y11
10 Two-thirds of X23
13 Y31 divided by Z24
16 Y1 times Y11
18 Three-fourths of Y6
21 Twenty-two times X7
23 Three times a prime number
26 Half of Y29, then subtract Z3
27 Four times Y12
30 A square
32 Sixty-six times a prime number
33 Z5 plus Z26

Y Direction
1 A square
2 Mean of Z2 and Y32
5 Y12 minus half of X4
6 Mean of X27 and Y1
10 Y22 plus X21
11 Y12 minus Y32
12 Z26 plus Y5
15 Square root of X30
19 X23 plus Z24
20 Ninety times X18
22 A square
23 Z15 minus Y1
28 Y20 plus Z2
29 Three hundred nine less than X23
31 Twenty-four times a prime number
32 Same as Z26

Z Direction
1 Thirteen times Y6
2 Mean of Z25 and Z22
3 Eighty-six times X7
4 Twice a prime number
5 X33 minus Y32
8 Z10 plus half of Y31
9 Twenty-eight times Y23
10 Z17 minus X13
14 A prime number
15 Y15 plus Y6
17 Thirty-nine times Z25
22 Y32 plus Y15
24 X27 divided by seven
25 Y12 minus Z24
26 Y23 minus X4

Solution:

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