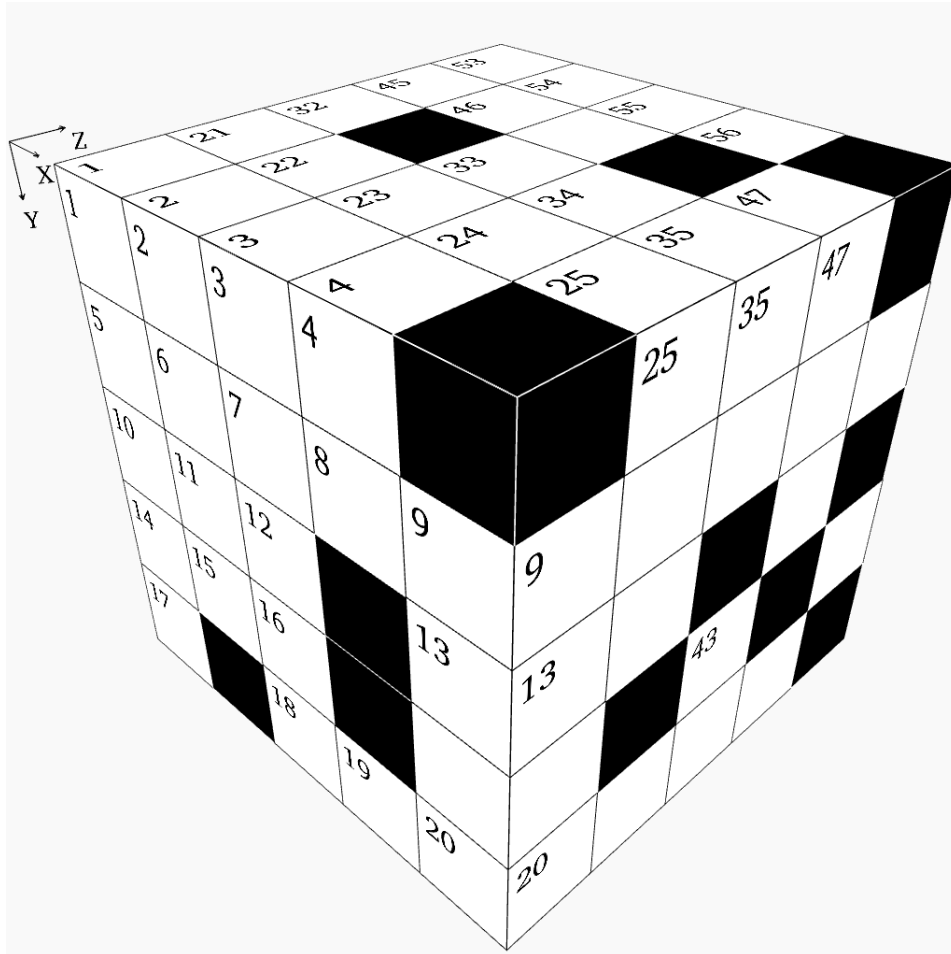# Cube - Challenging Puzzle #29

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 Twice a square
5 Fifty-two times a prime number
10 X14 minus Z7
14 Mean of Z4 and X51
18 X58 minus X53
21 Mean of Z12 and Y47
26 Eleven times a prime number
27 Twenty-six times a prime number
28 Y54 plus Z5
30 Nineteen times a prime number
33 Fifteen times a prime number
36 Z2 plus Y43
38 Z50 minus Z46
39 Five times a prime number
41 A prime number
44 Eighty-eight times a prime number
45 Z7 times Y42
49 Five times Z13
51 X1 divided by Z2
52 A prime number
53 Mean of Y4 and Y2
57 Seventy times a prime number
58 Thirty-three times a prime number
59 Five thousand five hundred two more than Z12
60 A square

Y Direction

1 Z19 minus X33
2 X21 minus X28
3 Six times a prime number
4 Z11 minus Z7
9 Y23 minus X26
21 Thirteen times a prime number
22 Mean of X52 and Y50
23 Eleven thousand eight hundred ninety-nine less than X44
24 Eleven times a prime number
25 X18 minus Y42
32 Nineteen times a prime number
34 X51 plus Y35
35 Three times Y46
37 Twice the result of Z29 plus Z5
40 Four times a prime number
42 Z7 minus Y43
43 Mean of Z46 and Y42
46 Mean of Z7 and Y42
47 Ten times Z46
48 Twice a prime number
49 Z9 divided by X49
50 A prime number
53 Three times a prime number
54 Five times a prime number
55 Y24 reversed
56 Last two digits are the same as Z46

Z Direction

1 Seven times a prime number
2 Z5 divided by Y42
3 A prime number
4 A prime number
5 Twenty-four times X51
6 X59 minus Y48
7 Z50 minus X51
8 Twice the result of Y32 minus Y21
9 Y47 times Y49
10 Mean of Y56 and X45
11 X51 plus Z2
12 Rearranged digits of X27
13 Sum of digits in X30
14 Thirty-one times a prime number
15 Sixty-four more than Z31
16 Nine thousand four hundred thirty-one more than X30
17 Half of X44, then subtract Y53
18 Seven times a square
19 Four times a prime number
20 Sixty-one times a square
25 Twenty-one times a prime number
29 Twenty-one times a prime number
31 X33 minus Y40
46 A square
50 X60 reversed

Solution:

Grid 1:

2	7	3	8	⬛
8	3	2	5	2
4	1	2	⬛	3
4	3	8	⬛	2
1	⬛	6	2	4

Grid 2:

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

Grid 3:

1	⬛	7	9	5
8	8	⬛	4	7
8	1	5	⬛	⬛
2	1	0	1	1
9	8	8	2	4

Grid 4:

3	1	2	⬛	1
⬛	9	⬛	⬛	6
1	⬛	1	6	0
1	⬛	3	7	⬛
8	7	6	3	1

Grid 5:

3	6	9	9	⬛
1	6	3	1	0
4	3	2	3	⬛
3	5	0	1	4
1	⬛	3	6	⬛