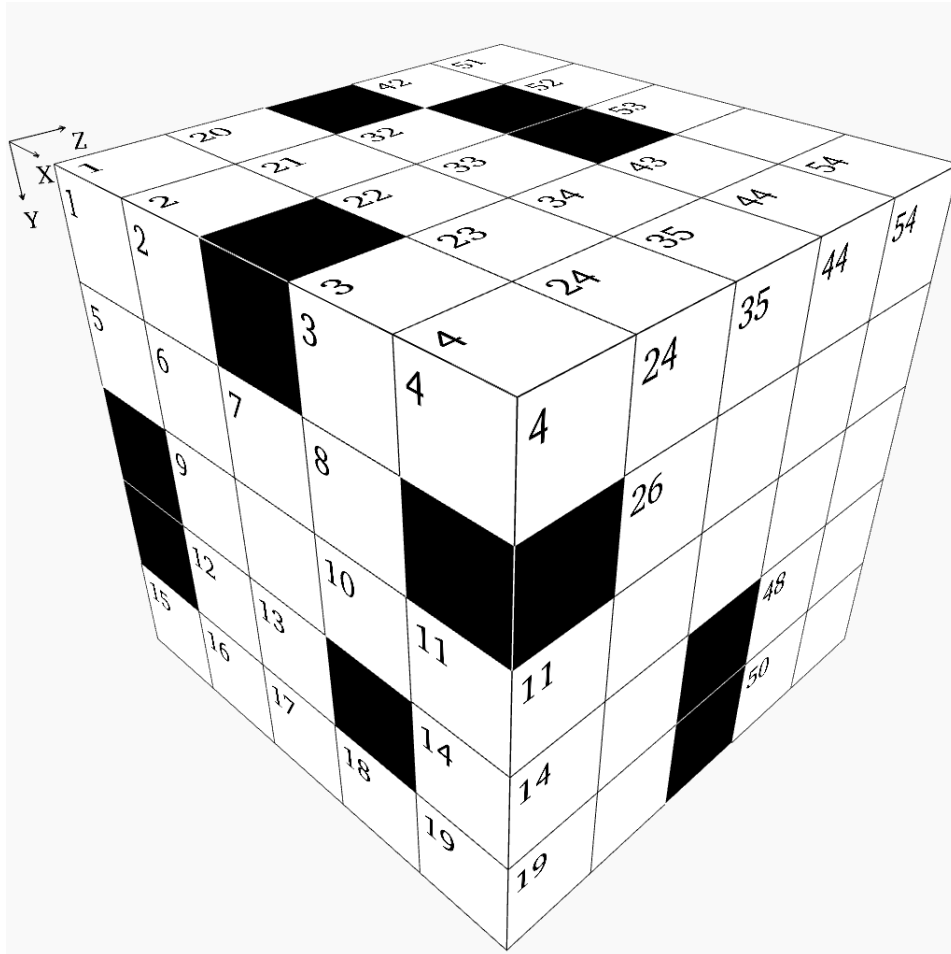# Cube - Hard Puzzle #44

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:

(crossword grids)

X Direction

1 Mean of Z19 and Z14
3 Y51 minus X37
5 Eighty-one times Y52
9 Mean of Y21 and Y11
12 Y43 divided by sixteen
15 A prime number
20 Mean of Z11 and Z12
25 Twice the result of Z4 plus Y21
27 Mean of Y22 and Z47
28 Z47 plus Z19
29 Y3 plus X27
31 Half of Y2, then subtract Y1
32 Mean of Y7 and Z8
36 Seven thousand seven hundred forty-four less than Y24
37 Y3 divided by Y34
39 X43 times Y58
41 Mean of Z1 and X20
43 Half of Y24, then subtract Y32
45 Z2 plus Z19
46 Eighty-seven times a prime number
49 Mean of X46 and X3
51 First two digits are the same as first two digits of Z12
55 X45 plus Y43
56 X55 plus Z22
58 A prime number
60 Twice the result of X58 plus Z50

Y Direction

1 Z22 minus Y59
2 Four thousand one hundred eight more than Z11
3 Twice the result of Y57 minus X39
7 A prime number
11 X29 minus X1
20 Rearranged digits of X15
21 Thirteen times a prime number
22 Y3 minus X28
23 Z7 divided by Z22
24 Twenty-two thousand seven hundred seventy-nine more than Z18
30 Y51 plus Y34
32 Eighty-nine times a prime number
33 Five thousand eight hundred fifty-six more than X25
34 Z1 reversed
35 Twice the result of X51 minus Z16
40 Z50 minus Y58
42 Z38 plus Y58
43 Twice the result of X29 minus X27
44 First two digits are the same as Z42
45 A prime number
51 A square
52 Z11 divided by Y42
53 Twenty-three times a square
54 Ninety-four times a prime number
57 Forty-nine times Z48
58 X43 minus X1
59 Z10 minus Y51

Z Direction

1 Y52 minus Y51
2 Y3 plus Y52
3 Twice a prime number
4 Forty-five times a prime number
5 Mean of Z18 and Z1
6 Fifty-nine times Y34
7 One thousand six hundred fifty-five more than Z16
8 One thousand four hundred eight more than Z9
9 Five times a prime number
10 Z47 plus Y1
11 Forty-six times a prime number
12 Y11 plus Y1
13 Three thousand one hundred fifty-five less than Y20
14 Y30 minus Z48
15 A prime number
16 Five hundred fifty-nine more than Z11
17 A prime number
18 A prime number
19 Y40 minus Y30
22 Z1 plus Z47
26 Mean of Z6 and Z3
38 Z26 minus X41
42 Y51 reversed
47 Y58 plus Z42
48 X45 minus Y11
50 Z22 reversed

Grid 1:

2	2	■	1	1
3	7	2	6	■
■	5	3	8	2
■	2	1	■	2
6	2	1	7	1

Grid 2:

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

Grid 3:

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

Grid 4:

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

Grid 5:

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