## Cube - Challenging Puzzle \#32



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 $\mathrm{X}, \mathrm{Y}$, 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 Z3 minus Z10
6 Mean of Y31 and X54
9 Ninety-seven times Z9
13 Y35 times Z51
16 Twelve times a prime number
21 Three thousand eight hundred seventy-three less than Z19
26 Nine thousand two hundred seventy-four more than X21
29 Thirty-one times Z11
30 Y42 plus X54
31 A square
33 Nine hundred fifty-three more than Z32
34 A prime number
37 Thirty-eight times Y31
38 Y39 minus X6
41 Eight thousand nine hundred seventy-six more than Y1
45 Mean of Y12 and Y43
46 Half of Y34, then subtract X49
49 Z9 minus Y53
50 Z 4 divided by Z 17
52 Two thousand seventy-eight more than X41
54 Mean of Z11 and Y46
55 Consecutive digits unordered
57 Mean of X30 and X54
59 One thousand three hundred fifty-five more than Z32
62 Last two digits are the same as Z44
63 X52 minus X1

## Y Direction

1 Twenty-six times a prime number
2 Seven thousand two hundred sixty-eight more than Z4
5 Z28 plus Z11
11 Twice the result of Y61 minus Y32
12 X21 divided by Y60
21 Mean of Y58 and X13
22 Last two digits are the same as last two digits of Z9
23 Seven times a prime number
24 Y 23 minus half of Y5
25 Mean of Y46 and Y50
31 X49 minus Z51
32 Mean of Y43 and X6
34 A palindrome
35 Z8 minus half of X6
36 X62 minus half of Z2
39 Mean of Y25 and Z42
$42 \mathrm{Z8}$ divided by nine
43 Y24 plus X30
46 A cube
47 First three digits are the same as first three digits of Y56
48 Twelve times a prime number
50 Z42 minus X57
52 Z18 divided by Y31
53 Mean of X30 and Y39
55 Half of Z20, then subtract X16
56 A prime number
58 Ninety-eight times a prime number
60 Mean of Y5 and Y55
61 Y46 plus Z42

## Z Direction

1 A prime number
2 Last two digits are the same as last two digits of Z42
3 A prime number
4 Z7 times X50
5 Z51 minus Z17
6 Eight times a prime number
7 Z51 minus Z5
8 Mean of Y25 and Z9
9 Thirteen times Y42
10 Mean of X41 and Y22
11 Z51 minus Y24
13 Five times a prime number
14 Twice a prime number
15 Twice a prime number
$17 \mathrm{Z9}$ divided by six
18 Fourteen times Y53
19 Three times a prime number
20 Two thousand six hundred sixteen more than X52
27 Three times a prime number
28 Z40 minus Y12
32 Six times a prime number
40 Thirty-nine times Z11
42 Mean of Z9 and Y43
44 Y53 minus Y31
51 Y39 minus Z11

## Solution:



