## Box - Hard Puzzle \#26



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 box pictured above and divide it into individual X - Y layers, we will get these planes:

| 1 | 2 | 3 |  | 4 | 5 | 18 | 19 | 20 | 21 | 22 |  | 28 | 29 | 30 | 31 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6 | 7 |  |  | 8 | 9 | 23 |  | 24 |  |  | 32 |  |  |  |  |
| 10 | 11 | 12 |  |  | 13 | 25 |  |  | 26 |  | 33 |  |  |  |  |
| 14 | 15 | 16 |  |  | 17 | 27 |  |  |  |  | 34 |  |  | 35 |  |
|  |  |  | 36 |  | 37 |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 39 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 41 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 43 |  |  |  |  |  |  |  |  |  |  |  |  |

## X Direction

1 Twenty-five times a prime number
6 Z4 minus X41
8 Z13 minus Y12
10 A prime number
14 Four times a prime number
18 X32 plus half of X25
23 Six times a prime number
25 Z36 plus Y29
26 Y29 plus Z42
27 A square
28 Twenty-six times a prime number
32 A prime number
33 Z 1 plus Z13
34 Y46 times X27
36 Y12 plus Y31
39 Half of X46, then subtract Y37
40 Y31 plus Z1
41 Twice a prime number
43 A prime number
46 Sixteen times a prime number
47 Twenty-four times a prime number
48 One thousand four hundred twenty-one more than Z11

## Y Direction

1 A prime number
2 Six times a prime number
4 Y20 minus X36
5 Four times a prime number
12 A square
18 Mean of Y38 and Z2
19 Rearranged digits of X41
20 Y21 minus X40
21 X26 plus Y20
22 Twenty-six times a prime number
28 Y5 plus X8
29 Y47 minus Y31
30 Thirteen times a prime number
31 Mean of Y29 and Y42
32 Twice a prime number
36 Thirty-eight times a square
37 Seventy-four times Z1
38 A prime number
42 Y12 plus Z36
44 Mean of Y30 and Y29
45 Mean of Y22 and Y36
46 Thirty times Y4
47 A square

## Z Direction

1 Y46 divided by fifteen
2 A prime number
3 Mean of Y32 and Y47
4 Forty-one times Z13
5 Twelve times Y31
6 Four times a prime number
7 Twice a prime number
8 A prime number
9 Thirteen thousand eighty-eight less than Z14
10 Mean of X23 and X28
11 One thousand one hundred ten more than Z 8
13 X10 minus X25
14 Forty-eight times a prime number
15 Nine thousand four hundred eighty-four less than Z14
16 Ninety-three times a prime number
17 Two hundred fifty-three more than X32
24 Y4 plus X39
26 Two hundred twelve more than X47
35 Half of X14, then subtract X1
36 Mean of Y4 and X33
42 X40 minus Y29

## Solution:

| 4 | 8 | 3 | 2 | 5 |  | 6 | 7 | 8 | 1 |  |  |  | 5 |  | 1 | 7 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9 | 5 |  | 3 | 7 |  | 3 | 0 | 6 | 7 |  |  | 6 | 7 |  | 7 | 7 | 7 |
| 1 | 3 | 1 |  |  |  | 7 | 8 |  | 9 |  |  | 9 | 9 |  |  | 0 |  |
| 9 | 8 | 6 | 3 | 6 |  | 1 | 2 | 1 |  |  |  | 8 | 3 |  | 4 | 9 | 0 |
|  |  |  | 6 | 3 |  | 3 |  |  | 1 |  | 3 |  |  | 6 |  |  |  |
|  |  |  | 4 | 4 |  | 9 | 3 | 3 |  | 6 | 8 |  | १ | 6 |  |  |  |
|  |  |  | 2 | 0 | 7 | 8 |  |  | 6 | 9 | 6 |  |  | 3 |  |  |  |
|  |  |  | 2 | 4 | 7 | 9 | 3 | 3 | 4 | 0 | 3 |  | 3 | 0 |  |  |  |

