## Box - Intermediate Puzzle \#8



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 | 13 | 14 | 15 | 20 | 21 |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3 | 4 | 5 | 16 |  |  |  |  |  |
| 6 | 7 | 8 | 17 |  |  |  |  |  |
| 9 | 10 |  |  |  |  |  |  |  |

## X Direction

1 Z7 minus Y23
3 Three times X11
6 Mean of Z5 and Z2
9 Y23 plus X22
11 Three-fifths of X18
13 Fifty-nine more than X19
16 Five times a prime number
17 Mean of Z9 and X6
18 Mean of Y15 and Y20
19 Z5 plus half of Z1
$20 \mathrm{Z7}$ divided by four
22 X9 minus Z19
24 Fifty times Z10

## Y Direction

1 Fifteen times a prime number
2 A square
3 Mean of X3 and X18
13 Twice the result of Y21 plus Z8
14 A prime number
15 Three times a prime number
20 X1 minus X20
21 Eight thousand fifty-seven less than Y14
23 Y20 plus Z6

## Z Direction

1 Twenty-seven times X22
2 Mean of Z11 and X11
3 Z12 divided by thirty
4 A prime number
5 A square
6 Z19 minus Y20
7 X1 plus Z19
8 Seven times a prime number
9 Fifty-three more than Z 4
10 X18 divided by nine
11 Fifty-seven times Z10
12 Twenty times Y20
19 Same as Y23

## Solution:

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

