## Box - Intermediate 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:


## X Direction

1 Sixteen times a prime number
5 Five times a prime number
8 Mean of X23 and Z3
12 Seventy-five times a prime number
15 X24 plus Z7
16 Z 1 plus half of Z4
19 Eleven times Z19
20 Last two digits are the same as last two digits of Z1
21 Thirty-eight times a prime number
23 Seven times Z20
24 Y22 minus Y1

## Y Direction

1 Y16 minus X19
2 Fifty-two times Z20
3 Y4 plus X19
4 Z10 minus X8
13 Eighty-one times Z20
14 Thirty-two times a prime number
16 X20 minus X15
17 A prime number
18 Y17 plus X19
21 X12 minus half of Z3
22 X5 minus half of Y2

## Z Direction

1 Rearranged digits of X12
2 Sixty-nine times a prime number
3 Eight hundred seventy-eight less than X1
4 Twice a prime number
6 Twenty-two times a prime number
7 Y22 minus Y18
9 Consecutive digits unordered
10 Ten times a prime number
11 Rearranged digits of Y4
19 Y13 divided by Z7
20 Two-thirds of Z19

## Solution:

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

