## Cube - Intermediate Puzzle \#12



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:


| 9 | 10 | 11 |
| :--- | :--- | :--- |
| 12 |  |  |
| 13 |  |  |

## X Direction

1 Mean of X4 and Z8
4 X13 minus Y9
$7 \mathrm{Z1}$ minus half of Y1
9 Seven times a prime number
12 One hundred fifty-seven more than Y4 10 Twice the result of Z3 minus Z4
13 Four less than Z2

9 Rearranged digits of Y11

## Y Direction

1 Mean of X1 and X4
4 Consecutive digits unordered
6 A prime number

11 Twice a square

## Z Direction

1 Twice a prime number
2 X 9 plus half of Y9
3 Forty-two times a square
4 Z 5 minus Y 6
5 Y11 minus X1
6 Z5 minus X4
8 Twice Y6

## Solution:

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

