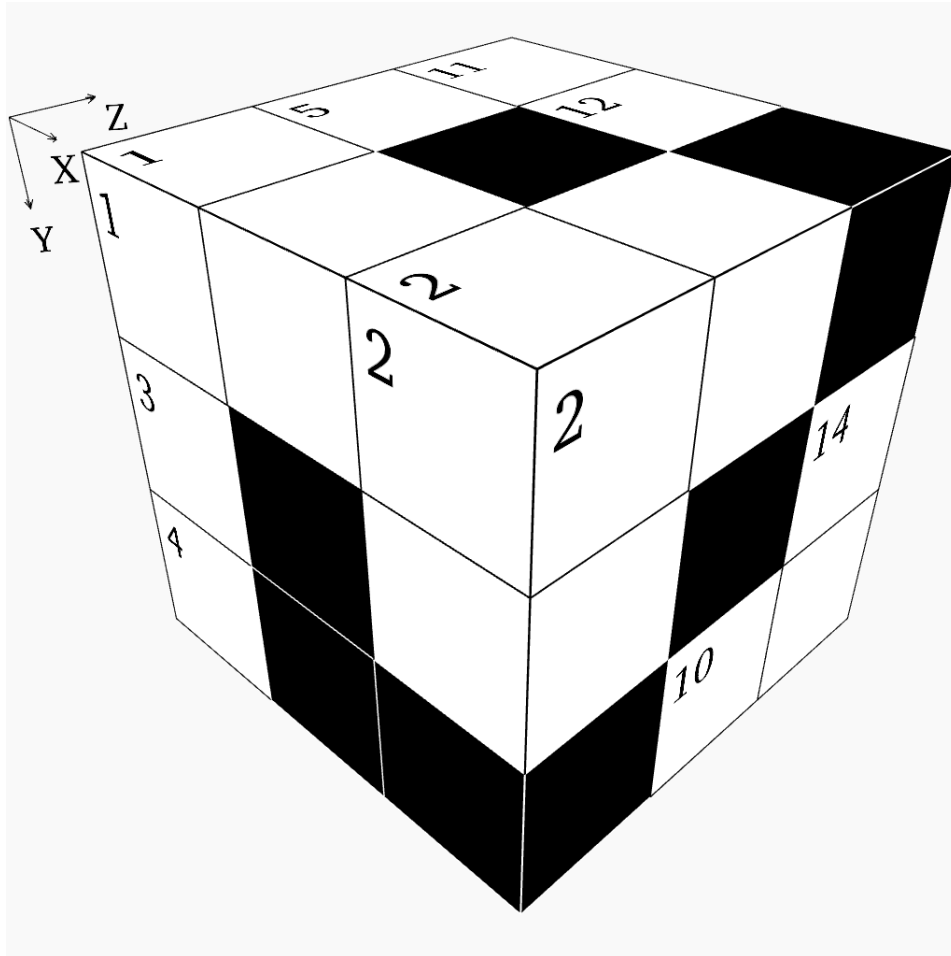# Cube - Intermediate Puzzle #20



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 X,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:

| 1 | | 2 |
|---|---|---|
| 3 | ■ | |
| 4 | ■ | ■ |

| 5 | ■ | |
|---|---|---|
| 6 | 7 | ■ |
| 8 | 9 | 10 |

| 11 | 12 | ■ |
|---|---|---|
| 13 | | 14 |
| ■ | 15 | |

### X Direction
**1** Twice the result of X13 minus Y14
**6** Z10 divided by six
**8** Thirty-three times a prime number
**11** Consecutive digits in ascending order
**13** Twice a prime number
**15** Four less than Z7

### Y Direction
**1** Y2 times Z2
**2** X11 minus Z2
**5** Z10 plus Z2
**7** Z3 minus X8
**11** Twice Z2
**12** Forty-three times X6
**14** Four times X6

### Z Direction
**1** Thirteen times Y7
**2** A cube
**3** X8 plus Z9
**4** Z3 divided by twenty-two
**7** Twice Z2
**9** Mean of X11 and Y11
**10** Y5 minus half of Z7

**Solution:**

| 7 | 7 | 2 | | 1 | ■ | 7 | | 5 | 6 | ■ |
| 8 | ■ | 9 | | 1 | 5 | ■ | | 4 | 4 | 6 |
| 3 | ■ | ■ | | 7 | 5 | 9 | | ■ | 5 | 0 |

**Intermediate-20**