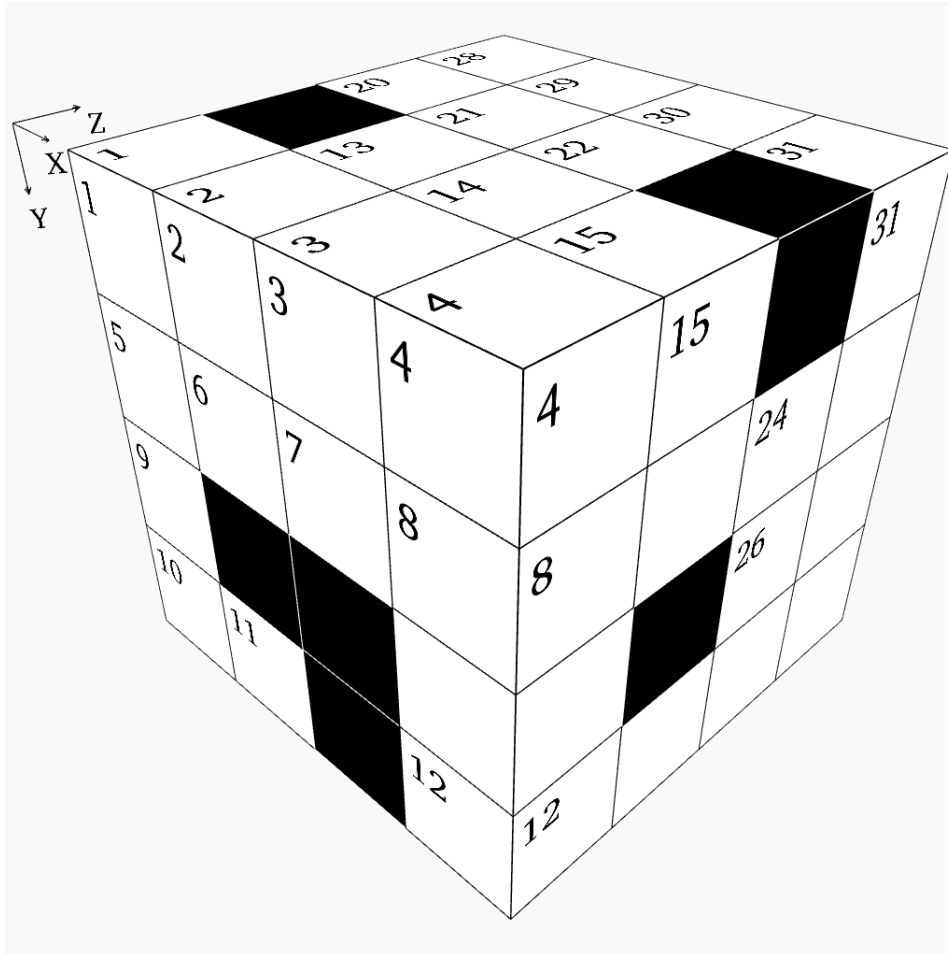


Difficulty: ★★☆☆☆

Cube - Challenging Puzzle #35



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 | | 13 | 14 | 15 | 20 | 21 | 22 | | 28 | 29 | 30 | 31 |
| 5 | 6 | 7 | 8 | | 16 | | | 23 | | | 24 | | 32 | | |
| 9 | | | | | | 17 | | | | 25 | 26 | | 33 | | |
| 10 | 11 | | 12 | | 18 | 19 | | 27 | | | | | | | |

X Direction

- 1 Y31 minus X25
- 5 Thirty-one times a square
- 10 Twice the result of X28 minus Y29
- 13 X32 minus X16
- 16 Ten times X10
- 18 Sixteen times a prime number
- 20 Thirty-three times a prime number
- 23 Nine hundred seventy-six more than Z12
- 25 Three times Y13
- 27 Thirty-six times a prime number
- 28 Z2 reversed
- 32 Forty-five times a prime number
- 33 Six times a prime number

Y Direction

- 1 Nine times a prime number
- 2 X32 divided by nine
- 3 Consecutive digits in descending order
- 4 Seventy-two times a prime number
- 13 Y24 divided by thirty-eight
- 14 Six times a prime number
- 15 Twice a square
- 20 X27 minus Z20
- 21 Y31 divided by Z26
- 22 One thousand six hundred seventy more than Y31
- 24 Twenty-six times a prime number
- 29 Two hundred sixteen more than Y1
- 30 Half of Z17, then subtract X13
- 31 Eighty-seven times a square

Z Direction

- 2 X28 reversed
- 3 Mean of X1 and Y13
- 4 X27 minus Y20
- 6 Eight times a prime number
- 7 Z12 minus half of Y22
- 8 X20 plus Z19
- 9 A palindrome
- 11 Mean of Y1 and Y2
- 12 Forty-eight times a prime number
- 17 Z9 minus Z19
- 19 X33 minus Z9
- 20 Same as Z4
- 26 Three times X10

Solution:

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