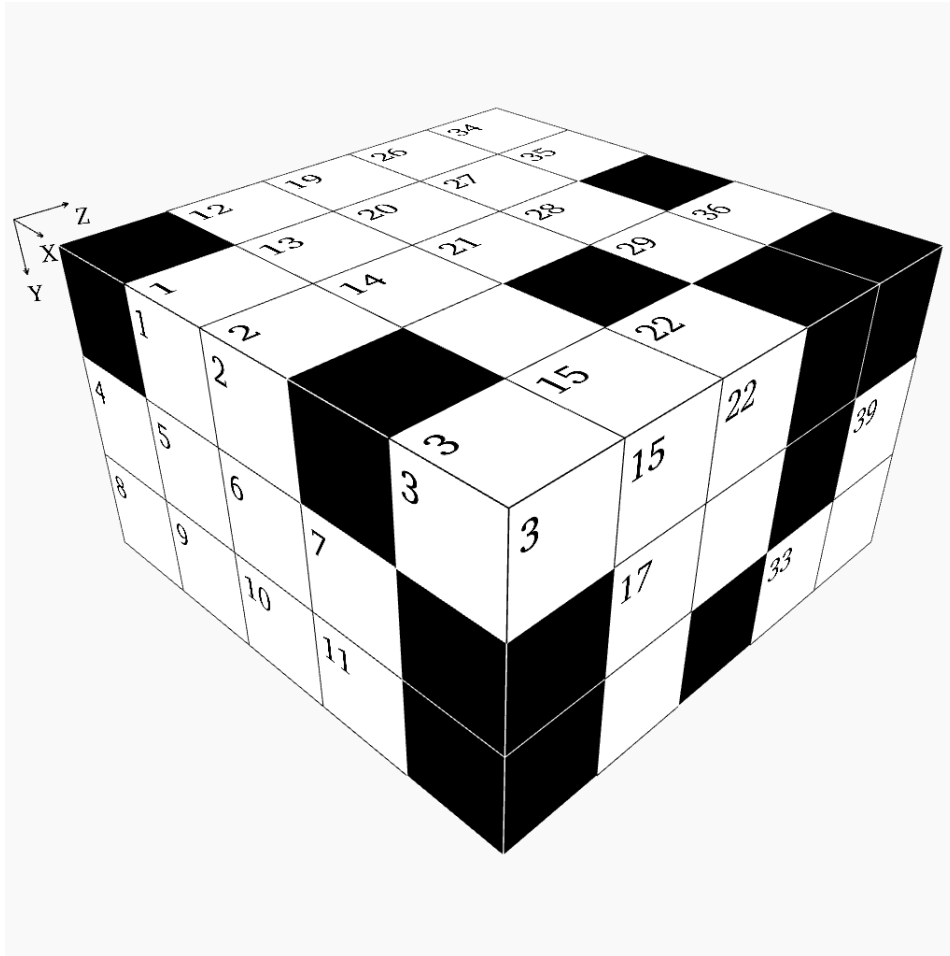


Difficulty: ★★☆☆☆

Box - Challenging Puzzle #40



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 box pictured above and divide it into individual X-Y layers, we will get these planes:

| | | | | | | | | | | | | | | |
|---|---|----|----|---|----|----|----|--|----|----|----|----|----|----|
| | 1 | 2 | | 3 | 12 | 13 | 14 | | 15 | 19 | 20 | 21 | | 22 |
| 4 | 5 | 6 | 7 | | 16 | | | | 17 | 23 | | | 24 | |
| 8 | 9 | 10 | 11 | | 18 | | | | | 25 | | | | |

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 26 | 27 | 28 | 29 | | 34 | 35 | | 36 | |
| | 30 | | | | 37 | | 38 | | 39 |
| | | 31 | 32 | 33 | | | 40 | | |

X Direction

- 1 X19 minus Y19
- 4 Seventy-seven times Z9
- 8 One thousand two hundred thirty-three more than X4
- 12 Forty-six times a prime number
- 16 X26 minus X25
- 18 A prime number
- 19 Y34 minus Z11
- 23 Fourteen times a prime number
- 25 Eight times a prime number
- 26 Y14 plus X40
- 30 Y22 plus Y35
- 31 A prime number
- 34 A square
- 37 Mean of Z10 and X4
- 40 Ninety-six times Z33

Y Direction

- 1 Y13 minus Y4
- 2 Twice the result of Z6 minus Z1
- 4 Same as Y38
- 7 Z3 minus Y13
- 12 Y15 minus Z9
- 13 Y1 plus Y38
- 14 Y29 minus Z33
- 15 Y13 plus X19
- 19 X26 minus Y12
- 20 Y15 minus Z32
- 21 Y2 plus Y13
- 22 Z17 minus Z33
- 27 X19 minus half of Y12
- 28 Seven times a prime number
- 29 Mean of X31 and Y27
- 34 Z3 minus X34
- 35 Y13 divided by five
- 36 Y2 minus Y39
- 38 A prime number
- 39 Z32 plus X1

Z Direction

- 1 X37 plus X1
- 2 Half of X8, then subtract Y1
- 3 A square
- 4 Y21 minus Y14
- 5 Z8 plus Y15
- 6 Two hundred fifty-two more than X37
- 8 First two digits are the same as first two digits of X40
- 9 A prime number
- 10 Fifty-three times a prime number
- 11 Mean of Y22 and Y39
- 12 Last two digits are the same as last two digits of Z5
- 17 X25 minus Z3
- 24 Twice the result of Y19 plus Y4
- 29 Half of Z11, then subtract Z33
- 32 Y22 minus half of Z17
- 33 Y13 divided by forty-seven

Solution:

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

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