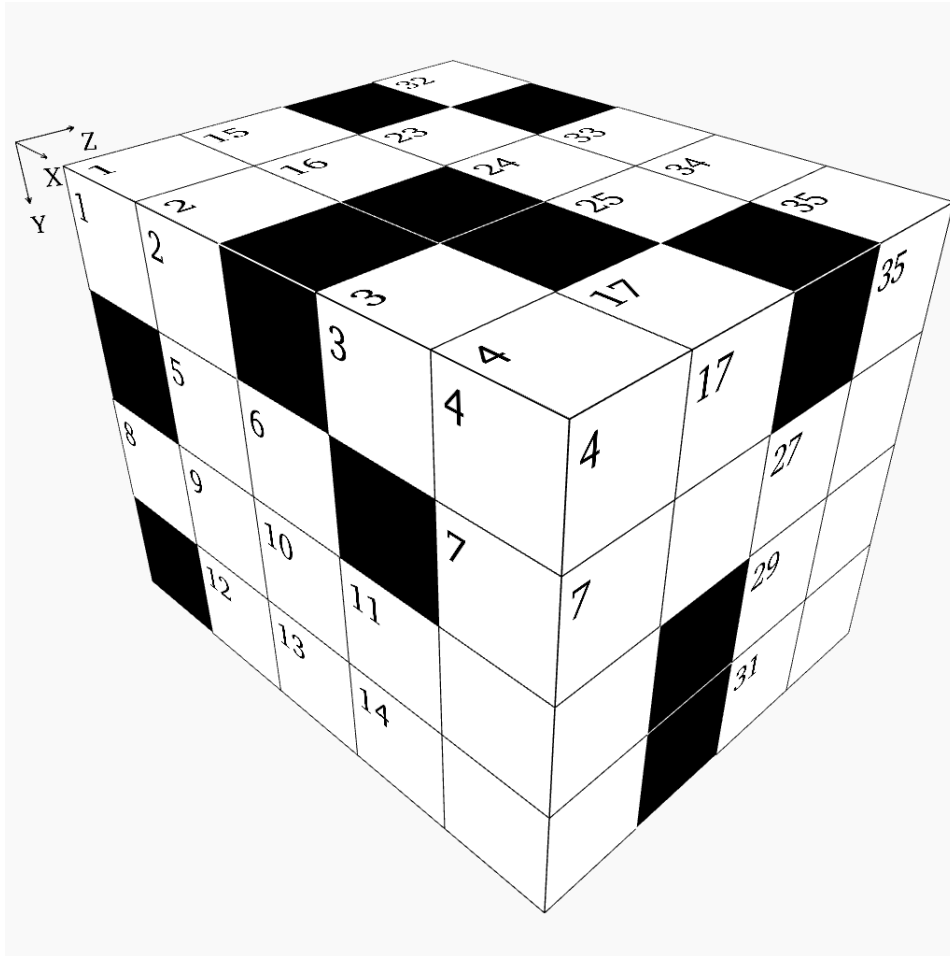


Difficulty: ★★☆☆☆

Box - Challenging Puzzle #66



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	4	15	16			17		23	24	25	
	5	6		7	18		19	20		26				27
8	9	10	11		21					28				29
	12	13	14		22					30				31
					32		33	34	35					
					36	37								
					38									
					39									

X Direction

- 1 Y27 divided by X15
- 3 Y34 minus X22
- 5 Three times a prime number
- 8 Thirty times a prime number
- 12 Y2 minus Y32
- 15 X3 reversed
- 18 Z10 times X15
- 21 One thousand one hundred ninety-three less than Z6
- 22 Twenty-three times a prime number
- 23 Twelve times a prime number
- 26 Forty-six times a prime number
- 28 Z2 minus X33
- 30 A square
- 33 Y26 minus half of Y27
- 36 Sixty-seven times a prime number
- 38 Sixty-three times a prime number
- 39 Eight times a prime number

Y Direction

- 2 One thousand four hundred seventy-five less than X21
- 4 Z6 minus Y16
- 6 Z22 plus Z20
- 11 Six times Z4
- 15 Mean of Z5 and Z11
- 16 Consecutive digits unordered
- 17 Two-thirds of X5
- 19 Y23 minus Z8
- 20 Z20 plus Z24
- 23 Eleven times a square
- 24 X39 minus X23
- 25 Y17 minus half of Z4
- 26 Sixteen times a prime number
- 27 Y35 divided by three
- 32 A prime number
- 33 Y19 plus Z22
- 34 Thirty-eight times Z11
- 35 Fifty-four times X1
- 37 Y33 minus X28

Z Direction

- 1 Mean of X5 and Z25
- 2 A square
- 4 X23 divided by forty-one
- 5 Fifty-five times a prime number
- 6 One hundred forty-six more than Y24
- 7 Three times Y33
- 8 Z14 plus Z9
- 9 Seven times a prime number
- 10 Thirty-two times a prime number
- 11 Z24 minus Z4
- 12 Five times Y19
- 13 Mean of Y4 and Y33
- 14 Mean of Y4 and X22
- 18 A square
- 20 Thirty-five times Y25
- 22 Y35 minus Z9
- 24 Z31 plus Z25
- 25 Mean of Y25 and Y17
- 29 X3 minus Z4
- 31 X1 plus Z1

Solution:

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