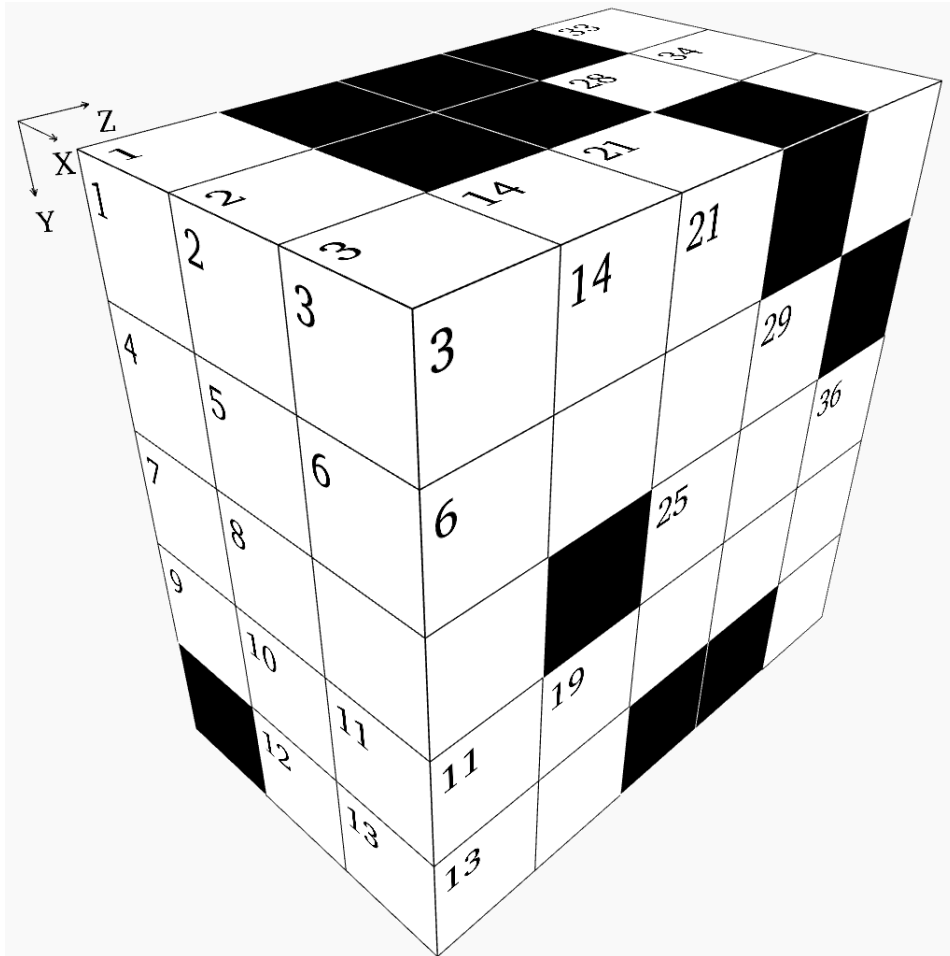


Difficulty: ★★☆☆☆

## Box - Challenging Puzzle #45



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

### X Direction

- 1 Three times Y29
- 4 Y36 minus Y19
- 7 X4 reversed
- 9 X37 plus Z3
- 12 X7 minus X20
- 15 Mean of X26 and Y14
- 17 A square
- 18 A prime number
- 20 X37 minus X30
- 22 Mean of Z3 and X31
- 24 Z25 reversed
- 26 Seven times a prime number
- 27 Mean of Z28 and X32
- 30 Mean of Y19 and X17
- 31 One hundred eighty-seven more than Y35
- 32 Y14 reversed
- 33 X20 plus half of X12
- 35 Rearranged digits of X7
- 37 X26 plus half of X27

### Y Direction

- 1 Four times a prime number
- 2 First two digits are the same as first two digits of Z25
- 3 Thirty-six times a prime number
- 14 X32 reversed
- 15 Half of Y22, then subtract X18
- 16 Z7 plus Y15
- 19 X31 divided by seventy-four
- 21 A prime number
- 22 One thousand more than Y1
- 23 Mean of Y1 and X1
- 29 Z7 minus X15
- 30 Twice the result of Y29 plus Y14
- 31 Y34 divided by X32
- 34 Thirty-four times a prime number
- 35 Mean of Z25 and Z7
- 36 A prime number

### Z Direction

- 3 Y36 minus X22
- 4 Z3 plus X9
- 5 Mean of Y36 and X9
- 6 Three times a prime number
- 7 Z3 plus Y14
- 8 Twelve thousand three hundred sixty more than Z9
- 9 Eighty-two times a prime number
- 10 Fifty-two times a prime number
- 11 Seven times a prime number
- 12 Four times a prime number
- 13 X15 minus Z28
- 20 Three times a prime number
- 25 X24 reversed
- 28 Mean of X17 and Y14

**Solution:**

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