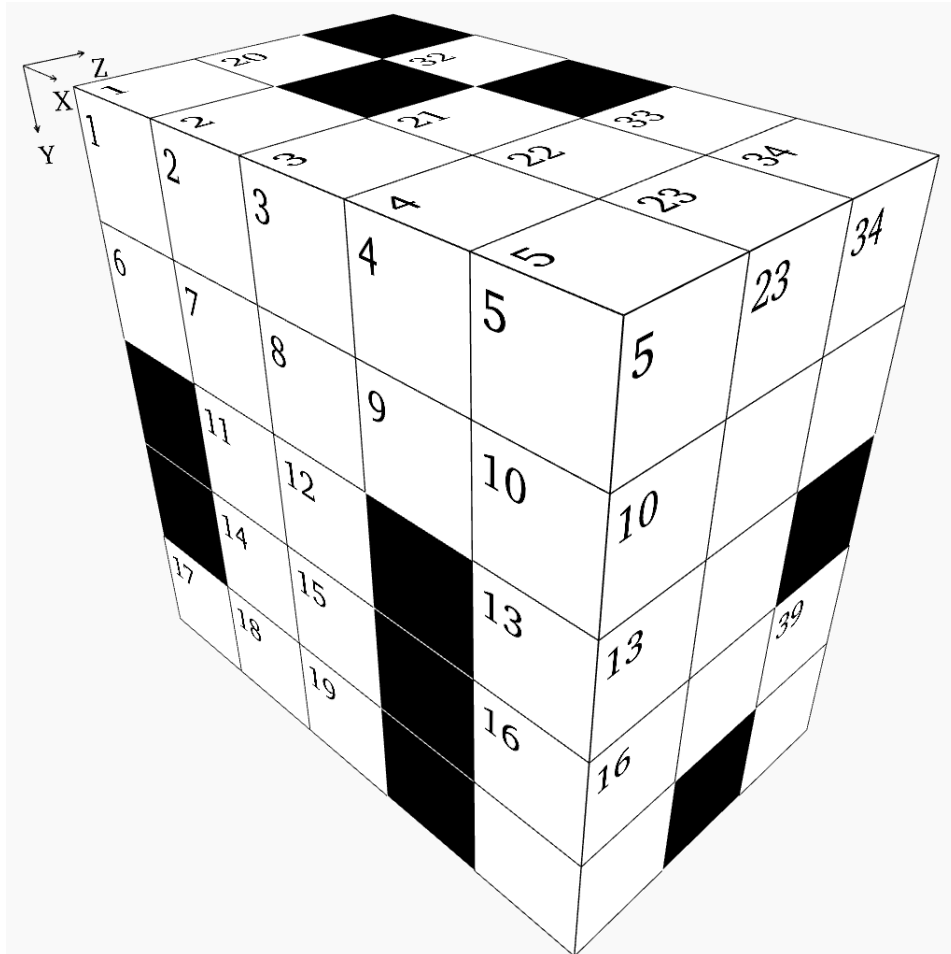


Difficulty: ★★☆☆☆

Box - Challenging Puzzle #68



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	5	20		21	22	23		32		33	34
6	7	8	9	10	24	25				35				
	11	12		13		26		27		36			37	
	14	15		16	28			29					38	39
17	18	19			30			31		40			41	

X Direction

- 1 Twice a prime number
- 6 Half of X24, then subtract Z3
- 11 Mean of Z9 and Z16
- 14 Z31 plus X38
- 17 Y1 times Y20
- 21 Thirty-one times Z28
- 24 A square
- 26 A prime number
- 28 Mean of Y22 and Z12
- 30 Y32 times Y1
- 33 X11 minus X41
- 35 X38 plus Z27
- 36 Consecutive digits unordered
- 38 Twice Z13
- 40 Mean of X14 and Z15
- 41 A square

Y Direction

- 1 Z3 minus Z29
- 2 Twice the result of Y5 plus X26
- 3 Forty-nine times a prime number
- 4 Z5 minus Z10
- 5 Six thousand four hundred fifty-four less than Y22
- 20 X17 divided by Z1
- 21 Nine times a prime number
- 22 Twenty-seven times a prime number
- 23 Seven times Z4
- 25 One thousand eight hundred more than X36
- 28 Mean of X38 and Z9
- 32 Z13 times Y4
- 34 Z8 plus Z29
- 35 Twenty-four times a prime number
- 37 Mean of Z28 and Z18
- 39 A square

Z Direction

- 1 Z3 minus Z29
- 3 X11 minus Y4
- 4 Y4 times Z8
- 5 Z10 plus half of Y28
- 6 Z17 minus X14
- 7 Seventy-six times Z19
- 8 X33 minus X38
- 9 X11 minus Y34
- 10 Y20 times Y4
- 11 Y34 times Y4
- 12 Z6 plus Z10
- 13 Mean of Z19 and Z28
- 14 Y4 plus X38
- 15 X11 minus Y4
- 16 Y34 plus X11
- 17 Mean of Y37 and Z5
- 18 Seventy-seven times Y4
- 19 X30 divided by Y32
- 27 Z6 divided by seven
- 28 Sum of digits in Y35
- 29 Mean of X41 and X11
- 31 Y34 minus Z29

Solution:

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