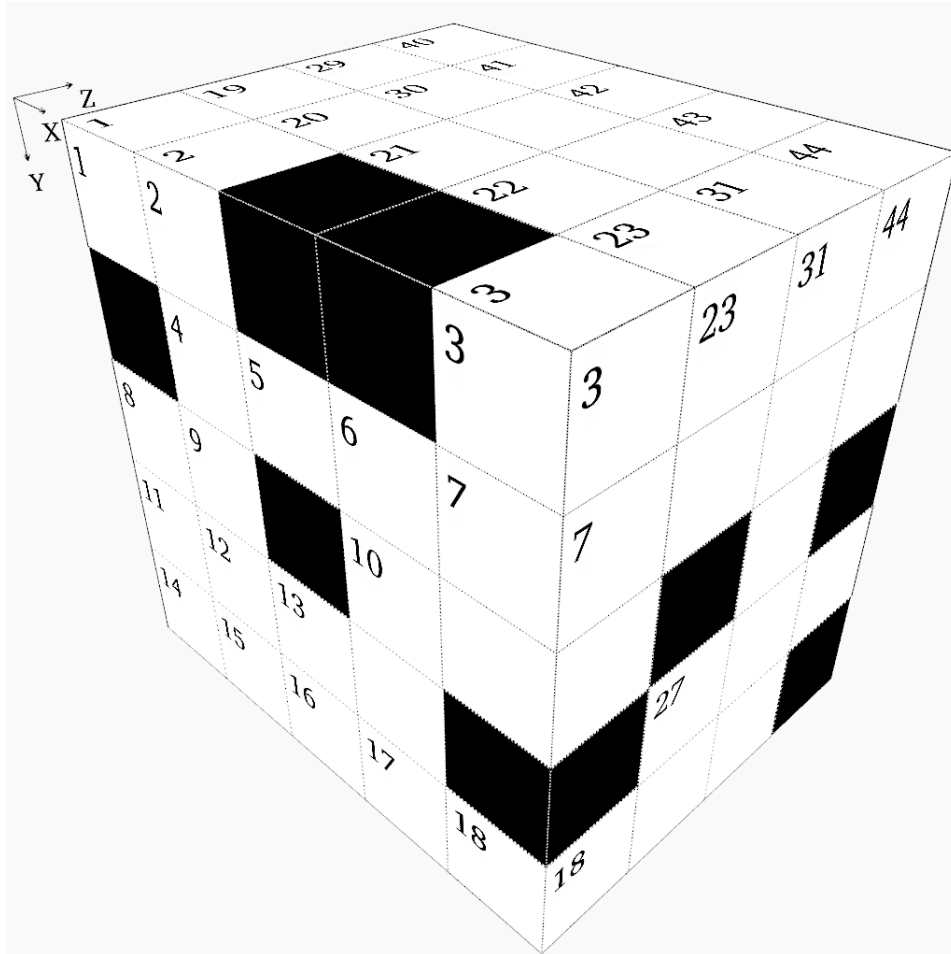


Difficulty: ★★★★★

Box - Challenging Puzzle #16



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	19	20	21	22	23	29	30			31
					24					32				
8	9				25		26				33	34	35	
11	12	13							27					
14	15	16	17	18	28					36		37	38	
										39				
					40	41	42	43	44					
					45									
					46									
					47			48						
					49									

X Direction

- 1 X32 minus half of X8
- 4 Forty-five times a prime number
- 8 Mean of X10 and Z6
- 10 A prime number
- 11 A prime number
- 14 A prime number
- 19 Forty-five times a prime number
- 24 Ten times a prime number
- 25 Six times a prime number
- 28 Three times a prime number
- 29 A square
- 32 Z8 reversed
- 33 A prime number
- 36 Y42 plus Z18
- 39 X45 plus Z14
- 40 Mean of X28 and Y30
- 45 First two digits are the same as Y13
- 46 Y48 plus Y29
- 47 X4 times Y27
- 49 A prime number

Y Direction

- 2 Nine times a prime number
- 3 Half of Z18
- 6 Z4 plus Z21
- 8 Z22 plus Y48
- 13 Y48 plus X1
- 19 Four times X46
- 20 Nine times a prime number
- 21 Three times a prime number
- 22 Consecutive digits unordered
- 23 Y48 plus Y27
- 27 Y43 divided by three
- 29 Z37 plus Y43
- 30 One thousand five hundred seven more than Y40
- 31 X19 plus Y34
- 34 A square
- 35 Twice a prime number
- 36 Mean of Y48 and X46
- 40 Seventy-four times a prime number
- 41 Nine times a prime number
- 42 Twenty-four times a prime number
- 43 Z8 minus Z37
- 44 A square
- 48 X46 minus Z8

Z Direction

- 1 Seventy-three times Z38
- 2 Y13 times Y48
- 3 Mean of Z4 and Z18
- 4 Twice the result of Z3 minus Y3
- 5 Same as Z37
- 6 X46 minus Y23
- 7 Fifty-seven times Y36
- 8 Z36 reversed
- 9 Z5 plus half of Z7
- 10 Five times a prime number
- 12 Three hundred fifty-four less than Z15
- 14 Eighty-three times Y44
- 15 X11 plus Y22
- 16 Mean of Z1 and Z10
- 17 A prime number
- 18 Twice a prime number
- 21 Z27 plus Y35
- 22 Thirteen times a prime number
- 24 Eight times a prime number
- 26 A prime number
- 27 Fifteen times Y27
- 36 Y23 plus Y48
- 37 Mean of X10 and Y43
- 38 Y44 reversed

Solution:

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

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