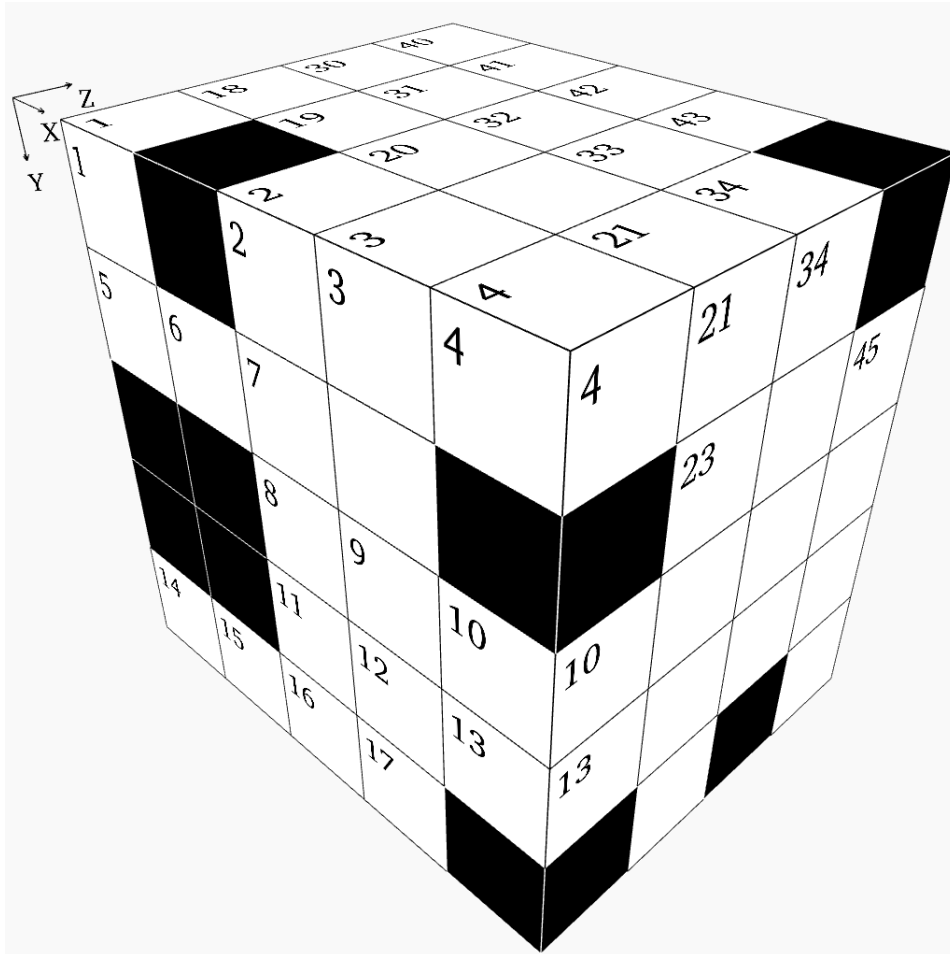


Difficulty: ★★★★★

Box - Hard Puzzle #10



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					18	19	20		21	30	31	32	33	34
5	6	7				22			23	35			36	
		8	9	10	24		25	26			37			
		11	12	13	27	28					38			
14	15	16	17		29					39				
					40	41	42	43						
					44				45					
					46									
							47							
					48									

X Direction

- 2 Twice a prime number
- 5 Y24 times Z36
- 8 Y34 minus X22
- 11 Consecutive digits unordered
- 14 Same as Z15
- 18 One thousand seven hundred fifty-two more than X44
- 22 Mean of Y10 and Z35
- 25 Half of Z15
- 27 Y40 minus X18
- 29 Eighty times a prime number
- 30 A prime number
- 35 Fifteen thousand five hundred less than Y21
- 37 Mean of Y43 and Y24
- 38 Forty-one times a prime number
- 39 One thousand four hundred thirty-nine more than Y45
- 40 Mean of X38 and X11
- 44 Z11 plus Y45
- 46 Last two digits are the same as Z36
- 47 Mean of X25 and Z35
- 48 A prime number

Y Direction

- 1 Z1 minus X14
- 2 Eleven thousand one hundred sixteen more than Y3
- 3 Sixty-two times a prime number
- 10 Z28 reversed
- 19 Three times a prime number
- 20 Ninety-one times a prime number
- 21 Ten times a prime number
- 24 Thirteen times a prime number
- 26 Thirty-four times Y1
- 28 Mean of Z37 and Y19
- 30 Twice a prime number
- 31 First two digits are the same as first two digits of X48
- 32 Twice a prime number
- 33 Sixteen thousand seven hundred ten less than Y2
- 34 A prime number
- 40 Two thousand three hundred thirty-eight less than Y20
- 41 Rearranged digits of X25
- 42 Sixty-nine times a prime number
- 43 A prime number
- 45 A prime number

Z Direction

- 1 Z15 plus Y1
- 2 Ninety less than Z8
- 3 Thirty-six times a prime number
- 4 Z8 divided by thirty-four
- 6 Y31 minus half of X46
- 7 Twice the result of X37 plus X48
- 8 Thirty-four times a prime number
- 9 Rearranged digits of Y45
- 10 One thousand five hundred five more than Z11
- 11 A prime number
- 12 Seven times a prime number
- 13 Sixty-four times a prime number
- 14 A prime number
- 15 Y41 plus half of X2
- 16 Mean of Z13 and Z17
- 17 Twice a prime number
- 19 X30 minus half of Y21
- 23 Twice a prime number
- 28 Y10 reversed
- 35 A prime number
- 36 Mean of Y1 and Z28
- 37 Consecutive digits in ascending order

Solution:

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