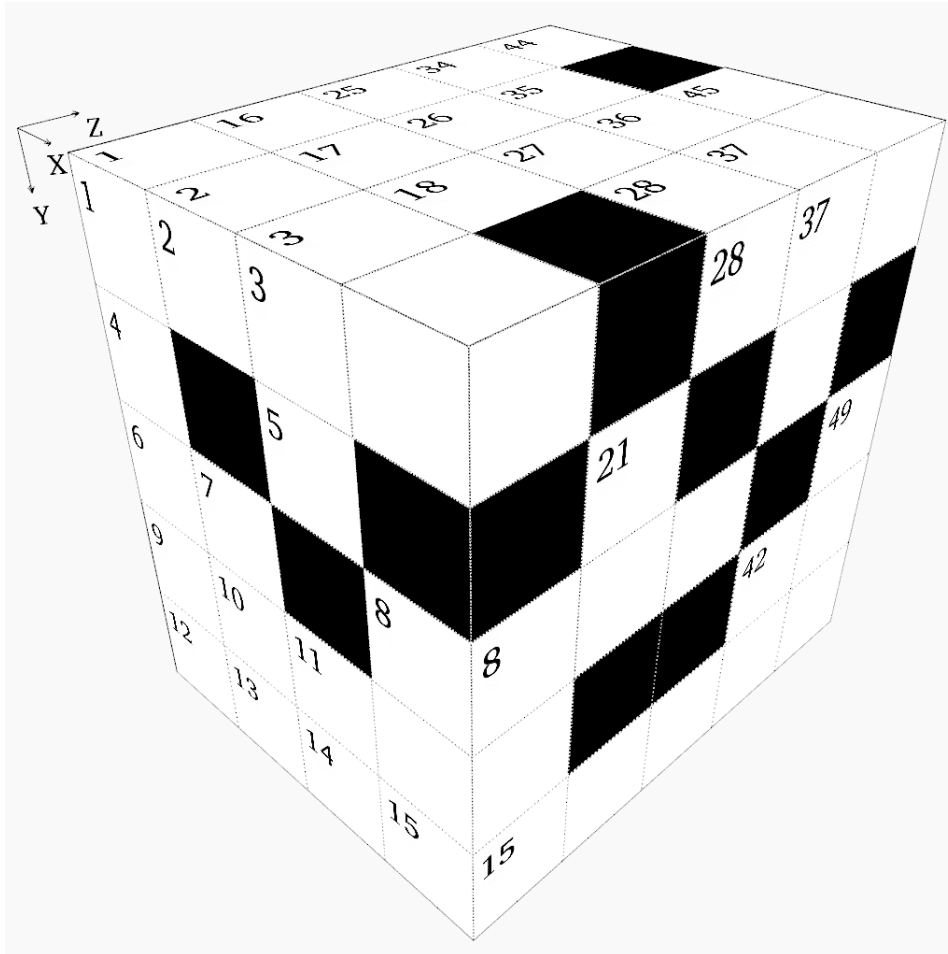


Difficulty: ★★★★★

Box - Challenging Puzzle #40



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

34	35	36	37	44		45	
38				46	47		
	39	40		48			49
41			42	50			
43				51			

X Direction

- 1 Seventy-seven times a square
- 6 Y32 plus Y3
- 9 Y34 times X29
- 12 Twice a prime number
- 16 Sixteen times X30
- 19 Two hundred thirty-seven more than X38
- 22 Twice a prime number
- 23 X31 minus X45
- 24 A prime number
- 25 Five hundred seventeen less than X19
- 29 X41 plus Z40
- 30 Mean of Y3 and X6
- 31 A prime number
- 33 Mean of X1 and X12
- 34 Eighty-three times Y37
- 38 Forty-three times a prime number
- 39 Twice Y37
- 41 All digits are the same
- 43 Twice a prime number
- 45 Y42 minus Y32
- 46 Twice the result of Y7 minus Z42
- 48 Fifteen times a prime number
- 50 Twice the result of Y47 minus X30
- 51 Fifty-eight times Y21

Y Direction

- 1 Twelve times a prime number
- 3 X9 divided by X29
- 7 Eleven times Y37
- 8 Twice the result of Z9 minus Y17
- 11 X29 minus Y32
- 16 Rearranged digits of Z1
- 17 Three times a prime number
- 18 A prime number
- 21 Same as Z42
- 25 Twelve thousand three more than Y16
- 26 Five times a prime number
- 27 Two-thirds of X29
- 32 X29 minus Y21
- 34 X45 minus Z40
- 35 Thirty-one times a prime number
- 36 Z5 divided by Z28
- 37 Z28 minus X41
- 41 Consecutive digits in descending order
- 42 Mean of X39 and Y8
- 44 Three thousand six hundred thirty-six less than Z5
- 45 Mean of Y35 and Y26
- 47 Fifty-nine times Z40
- 49 X16 minus Z8

Z Direction

- 1 Its digits total Y37
- 2 Seventy-four more than Z20
- 3 Mean of Y1 and X43
- 4 Its digits total Y34
- 5 First two digits are the same as X41
- 6 Fourteen times X30
- 7 Half of Y16, then subtract Y42
- 8 Y44 divided by Y49
- 9 Four times X19
- 10 Nine times a prime number
- 11 X34 minus half of X9
- 12 Rearranged digits of Y26
- 14 Y18 minus Z40
- 15 Three hundred thirty more than Z14
- 20 Seventy-three times a prime number
- 28 X30 plus Y42
- 40 X45 minus Y3
- 42 X29 minus Y32

Solution:

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

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