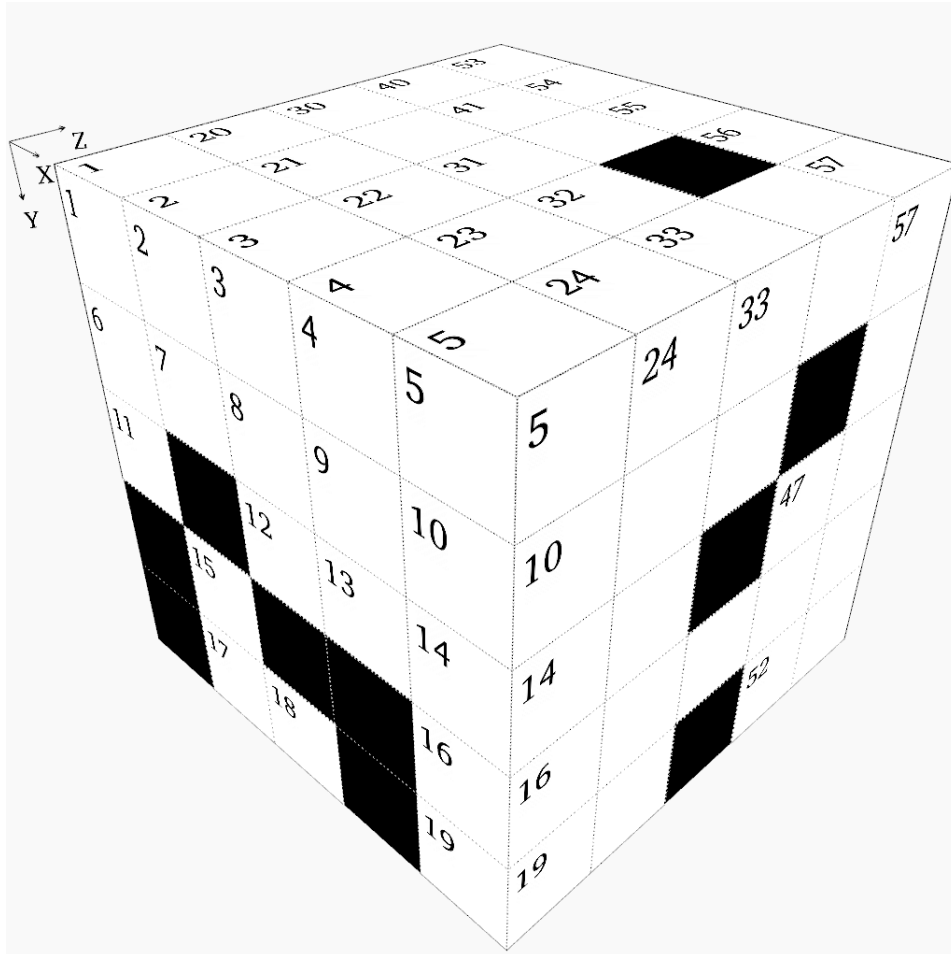


Difficulty: ★★★★★

Cube - Challenging Puzzle #33



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 cube pictured above and divide it into individual X-Y layers, we will get these planes:

1	2	3	4	5	20	21	22	23	24	30		31	32	33
6	7	8	9	10		25				34		35		
11		12	13	14	26	27				36	37			
	15			16	28					38				
	17	18		19	29					39				

40	41				53	54	55	56	57
42	43		44		58				
45		46		47	59				
48		49			60				
50			51	52	61			62	

X Direction

- 1 Seventy-two times a prime number
- 6 Seven thousand six hundred thirty-four more than X50
- 12 X39 times Y33
- 17 Y46 divided by X42
- 20 Last two digits are the same as X39
- 25 Thirty times a prime number
- 26 Its digits total X17
- 28 X36 times Z49
- 29 X20 minus Y40
- 30 Y22 minus Y23
- 35 A prime number
- 36 X28 divided by Z52
- 38 Mean of X17 and Y55
- 39 Y55 minus Y33
- 40 Z51 plus Y46
- 42 Mean of X38 and Z10
- 45 Mean of Y5 and X39
- 48 Six times a prime number
- 50 X53 plus Z28
- 53 Twelve times a prime number
- 58 Fourteen thousand forty-four less than X20
- 59 Mean of X60 and X61
- 60 X29 plus Z19
- 61 X62 plus Z43
- 62 Mean of Y56 and Z7

Y Direction

- 1 Mean of X40 and Z47
- 2 Mean of Z14 and X29
- 3 Twice the result of Y4 minus Z10
- 4 X29 plus Y15
- 5 Forty-two times a prime number
- 15 Mean of Y55 and Y2
- 21 Sixty times a prime number
- 22 A palindrome
- 23 Z27 minus Z49
- 24 Twice a prime number
- 26 Z18 plus Y1
- 30 A prime number
- 31 Y56 plus Y1
- 32 Rearranged digits of X12
- 33 Mean of Z7 and X17
- 37 Three times Z52
- 40 Sixteen times a prime number
- 41 Three thousand four hundred forty-one less than X28
- 44 Y55 times Y3
- 46 Thirty-nine times a square
- 47 A prime number
- 53 A prime number
- 54 Z9 minus Y53
- 55 X35 minus Y31
- 56 X12 divided by X39
- 57 Z16 minus Z5

Z Direction

- 1 First two digits are the same as first two digits of Y26
- 2 Twice a prime number
- 3 Seventeen times a prime number
- 4 Mean of Y4 and Y15
- 5 X17 plus Y30
- 7 X59 minus Z14
- 8 Y32 minus X60
- 9 A prime number
- 10 Mean of X29 and Y3
- 11 Seventy-three times a prime number
- 12 Six hundred sixty-five less than Z13
- 13 Twice a prime number
- 14 Y15 plus Z7
- 15 Four times a prime number
- 16 Two thousand two hundred fourteen more than X58
- 17 Twice the result of X48 minus Z3
- 18 Z51 plus Y55
- 19 Z34 divided by X62
- 27 Y46 plus Y37
- 28 Sixty-one times a prime number
- 29 Forty-nine times X38
- 34 Six times Z52
- 43 Z49 minus Z19
- 47 X42 plus Y33
- 49 Z18 plus Z19
- 51 Z4 minus Y2
- 52 Twice the result of Y2 minus Z43

Solution:

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

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