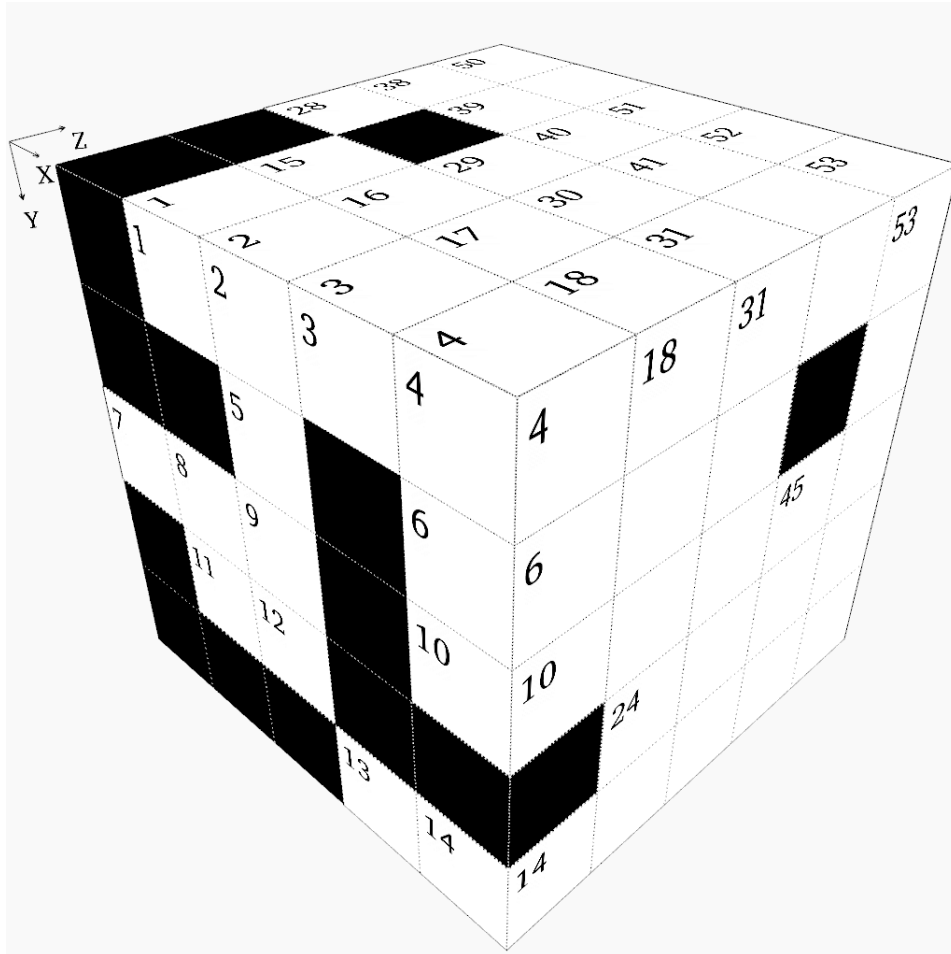


Difficulty: ★★☆☆☆

Cube - Challenging Puzzle #42



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		15	16	17	18	28		29	30	31
			5		6		19		20		32	33		
7	8	9		10		21			22		34			
	11	12				23				24	35			
			13	14		25	26		27		36			37
38	39	40	41			50		51	52	53				
42									54					
43				44	45				55					
46		47				56								
	48	49							57					

X Direction

- 1 X19 divided by seven
- 7 Y21 plus Z28
- 11 Z28 minus Y8
- 13 Z28 minus Y8
- 15 Fifty-seven times a prime number
- 19 Rearranged digits of Y38
- 21 Three thousand four hundred thirty-two more than Y28
- 23 Eighty-four times Y41
- 25 Y38 divided by X27
- 27 Mean of X43 and Z28
- 29 Fifty-four times Z1
- 32 Fifty-one times a prime number
- 34 X48 plus Z25
- 35 X44 plus Y4
- 36 Y45 minus Y21
- 37 Half of X23, then subtract Y50
- 38 Y18 plus Z32
- 42 Z39 times Y4
- 43 X36 minus Z1
- 44 Z19 divided by sixty-three
- 46 A prime number
- 48 X34 minus half of X13
- 50 Nine times a prime number
- 54 Mean of X43 and Z19
- 55 Fourteen times a prime number
- 56 Fourteen thousand two hundred seventy-nine more than Z5
- 57 Half of Z10, then subtract Y51

Y Direction

- 2 Fifty-two times a prime number
- 4 Thirty-four times Z1
- 8 X15 divided by twenty-nine
- 15 Thirty-seven times a prime number
- 16 Z22 plus half of Y33
- 17 A prime number
- 18 Forty-three times a prime number
- 21 Z49 plus Z28
- 28 A prime number
- 29 Eighty-seven times a prime number
- 30 A prime number
- 31 Same as Z10
- 33 One hundred forty-five less than X1
- 38 Three hundred ninety-seven more than Z20
- 39 X35 times Y40
- 40 Seven times Z1
- 41 First two digits are the same as first two digits of Z2
- 45 Y39 divided by X27
- 47 Y38 divided by X27
- 50 Three thousand three hundred forty-seven less than X50
- 51 Seven thousand five hundred six less than Z7
- 52 Y15 minus Z20
- 53 X50 minus Y4

Z Direction

- 1 X1 minus half of Y2
- 2 X15 plus half of Y31
- 3 Seventeen times a prime number
- 4 One thousand three hundred twenty-three more than Z7
- 5 Y31 minus Z20
- 6 Mean of Z32 and X55
- 7 Eight times a prime number
- 8 Three times a prime number
- 9 X46 plus X57
- 10 Z20 plus Z5
- 11 Eleven thousand two hundred thirty-seven more than X56
- 12 Eight times a prime number
- 13 Eighty-five times Y30
- 14 Thirty-one times a prime number
- 19 X25 plus Z32
- 20 Eight times a prime number
- 22 Five times a prime number
- 23 Twelve times X46
- 24 Thirteen times a prime number
- 25 X44 plus Z39
- 26 Y33 minus X27
- 28 Z5 divided by X7
- 32 Z19 minus Y47
- 39 Half of Z11, then subtract Z3
- 49 Z28 minus X25

Solution:

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

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