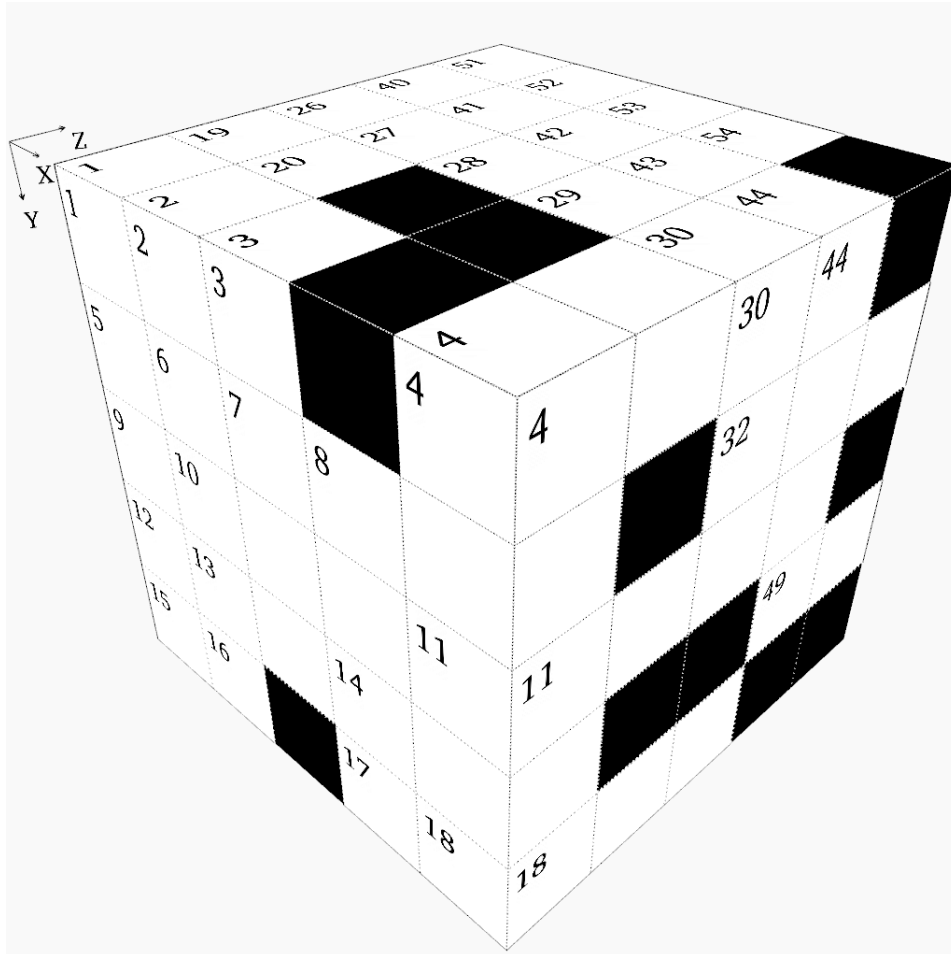


Difficulty: ★★★★★

Cube - Hard Puzzle #38



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

40	41	42	43	44	51	52	53	54	
45					55				
46	47								
	48			49	56				
50						57			

X Direction

- 1 X22 plus Z34
- 5 Last two digits are the same as last two digits of X31
- 9 First two digits are the same as first two digits of X35
- 12 Four times a prime number
- 15 X22 plus Y36
- 17 A prime number
- 19 Mean of Y36 and Y53
- 21 A prime number
- 22 Z33 plus Z10
- 23 X17 minus Z49
- 24 Mean of Z18 and Y27
- 26 Twice a prime number
- 31 Twenty-eight times a prime number
- 33 A prime number
- 35 Twelve times a prime number
- 38 Mean of X9 and Z11
- 40 Y26 plus X22
- 45 Y19 plus Y53
- 46 Twice the result of X12 minus Z15
- 48 Mean of X35 and X51
- 50 Forty-five times a prime number
- 51 Y51 times X15
- 55 Y4 plus X33
- 56 A prime number
- 57 A prime number

Y Direction

- 1 Thirty-seven times a prime number
- 2 Twice a prime number
- 3 Seventeen times a prime number
- 4 Rearranged digits of X26
- 8 Sixteen times a prime number
- 19 Forty-eight times a prime number
- 20 Six thousand two hundred ninety-five less than Y42
- 26 A prime number
- 27 X56 minus Z49
- 28 Ninety-three times a prime number
- 29 A prime number
- 30 A square
- 36 Y27 minus Z49
- 40 Z14 minus Y54
- 41 Eighty-eight times a prime number
- 42 Mean of Y2 and X9
- 43 Eighty-five times a prime number
- 44 Twice a prime number
- 51 Twice Y36
- 52 Half of Z6, then subtract X57
- 53 Z33 plus X17
- 54 Nine times a prime number

Z Direction

- 1 Three times a prime number
- 2 Four times a prime number
- 4 Sixteen times a prime number
- 5 Mean of Z33 and X12
- 6 Eighty-four times a prime number
- 7 Half of Z2, then subtract X50
- 8 Y29 minus half of X26
- 9 Three times a prime number
- 10 X57 minus Z37
- 11 Mean of X17 and Z25
- 12 Mean of Y30 and X23
- 13 Y1 plus half of Z4
- 14 Twenty-six times a square
- 15 Eighty-eight times a prime number
- 16 Sixty-three times a prime number
- 18 A prime number
- 25 Eighty-one times a prime number
- 28 Y36 plus X24
- 29 Z39 plus Z10
- 32 Nineteen times Z49
- 33 X56 minus X19
- 34 Mean of X23 and Z18
- 37 X22 plus Z10
- 39 A prime number
- 47 Z12 minus half of X1
- 49 Twice the result of Z37 minus X56

Solution:

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

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