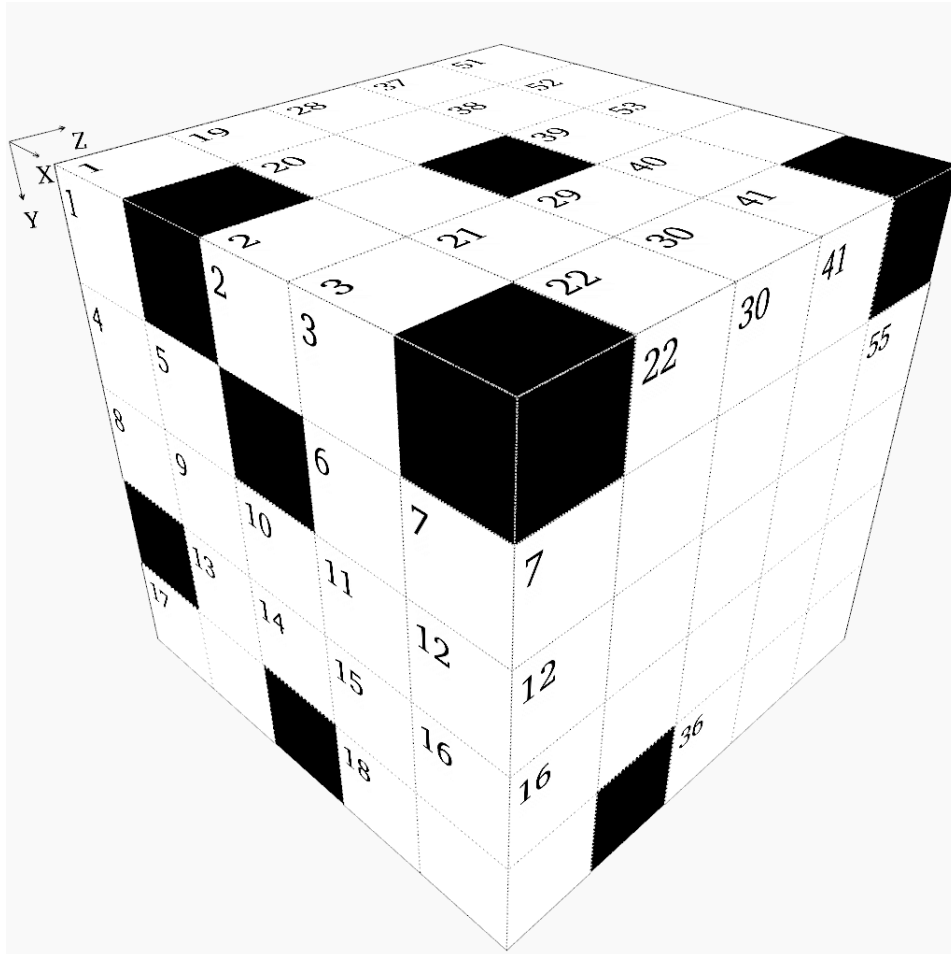


Difficulty: ★★★★★

Cube - Hard Puzzle #41



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

37	38	39	40	41	51	52	53					
42	43	44			54						55	
45					56					57		
46			47			58						
48	49	50				59						

X Direction

- 2 X51 minus half of X13
- 4 Y33 minus X2
- 6 Y1 divided by X28
- 8 Y57 times Z39
- 13 Forty-eight times Z43
- 17 Mean of X28 and Z6
- 18 X2 plus X34
- 19 Nine hundred ninety-two less than Z13
- 23 X4 minus X34
- 24 Mean of Z39 and Z50
- 25 Half of Y38, then subtract X24
- 27 Z13 plus half of Y26
- 28 X2 minus X6
- 29 X24 minus Z49
- 31 Four thousand six hundred twenty-nine more than Z11
- 34 X24 minus X23
- 35 Sum of digits in Z10
- 37 A prime number
- 42 Eight thousand five hundred twenty-five less than X48
- 45 Twenty-four times a prime number
- 46 Twice a prime number
- 48 Twenty-five times a prime number
- 51 Twenty-seven times a prime number
- 54 X29 times Z5
- 56 Fifty-one times a prime number
- 58 Fourteen times a prime number
- 59 X19 minus half of Y3

Y Direction

- 1 Three times Y33
- 3 Six thousand four hundred twenty-two more than X8
- 5 Mean of Y55 and X18
- 7 A prime number
- 10 X2 plus Z15
- 19 Four hundred sixty-three more than Y41
- 20 Ten times a prime number
- 21 Z36 times X28
- 22 Sixty-nine times a prime number
- 26 Six times Z50
- 28 Mean of Z36 and Z43
- 30 X31 reversed
- 32 Z39 plus Z43
- 33 X23 plus X18
- 37 Consecutive digits unordered
- 38 Seventy-four times a prime number
- 39 Seven times a prime number
- 40 X42 minus Z8
- 41 Last two digits are the same as Z47
- 51 Mean of X18 and Z35
- 52 Nineteen times a prime number
- 53 Six thousand seven hundred nineteen less than X48
- 55 A prime number
- 57 X8 divided by Z44

Z Direction

- 1 Seventy-nine times a prime number
- 2 X28 plus X6
- 3 Two thousand forty-seven less than X45
- 4 First two digits are the same as X24
- 5 Y33 minus X18
- 6 Z2 minus X17
- 7 Z16 minus X46
- 8 Fourteen times a prime number
- 9 Y39 plus half of Z4
- 10 Five thousand seven hundred twenty-three more than X56
- 11 First two digits are the same as X2
- 12 Six thousand nine hundred twelve less than Z9
- 13 A prime number
- 14 Four thousand three hundred fifty-eight more than Z7
- 15 Mean of Y33 and X34
- 16 Sixteen thousand seven hundred four more than Z4
- 17 Y41 minus X58
- 20 Nine times a prime number
- 22 Eleven times a prime number
- 35 Y1 minus X35
- 36 A prime number
- 39 Z43 minus X28
- 43 Z15 minus X6
- 44 Z15 minus Z2
- 47 X17 plus Z43
- 49 Mean of X17 and X29
- 50 Z15 plus X23

Solution:

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

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