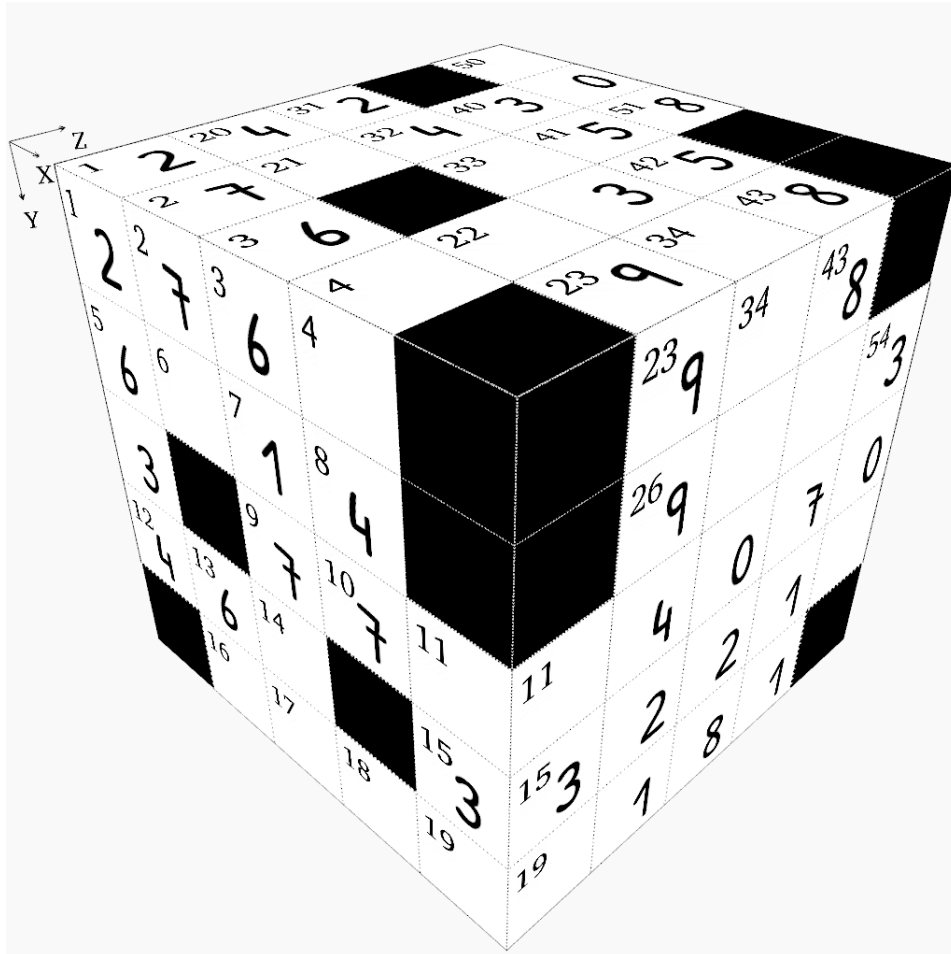


Difficulty: ☆☆☆☆☆

Cube - Beginner Puzzle #46



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	2 7	3 6	4		20 4	21		22	23 9	31 2	32 4	33	34 3	
5 6	6	7 1	8 4		24		25	0	26 9	35 7		7		
3		9 7	10 7	11		27 4		9	4	7		36 5	37 1	0
12 4	13 6	14		15 3	28 2	8		29 9	2		38 7		9	2
	16	17	18	19	30 1		1		1	7		39	5	8

	40 3	41 5	42 5	43 8	50	0	51 8		
	44	9	45 6				52	53 3	54 3
		46 3		7		55	7	2	0
47 4		48 9	3	1	56 3	9	4	2	
49	4	3		1					

X Direction

- 1 Four times a prime number
- 5 Six times a prime number
- 9 Twice X46
- 12 X50 minus Y32
- 16 Seventy-one times Y55
- 20 X44 divided by X49
- 22 Y55 minus Z8
- 24 Thirteen thousand seventy-two more than Z9
- 27 Forty-two times a prime number
- 28 Thirty-two times a prime number
- 30 Thirty-nine times a prime number
- 31 Ninety-seven times a square
- 35 Seven times a prime number
- 36 Y47 plus X12
- 38 Four times a prime number
- 39 X36 plus Y20
- 40 Six times a prime number
- 44 One thousand five hundred eighty-nine more than Y51
- 46 Nine times Z47
- 48 Forty-nine times X22
- 49 Mean of Y40 and Y4
- 50 Mean of X9 and Z1
- 52 All digits are the same
- 55 One thousand seven hundred seventy-two less than X38
- 56 Eighty-nine times a prime number

Y Direction

- 1 Mean of X9 and X27
- 2 Y40 plus Y56
- 3 A prime number
- 4 X36 minus Z45
- 11 X46 plus Y50
- 13 X24 minus Y33
- 20 Three-fourths of Y13
- 21 Six hundred ninety-four more than Z7
- 22 Sixteen times Z13
- 23 Forty-nine times a prime number
- 25 Three times a prime number
- 28 X12 minus Y4
- 31 Z1 plus Y56
- 32 Same as Z8
- 33 Three thousand eight hundred thirty-four more than Y43
- 34 Z15 minus X16
- 37 X49 minus Y20
- 40 X30 divided by Y11
- 41 A prime number
- 42 X55 minus half of Y2
- 43 Ninety-seven times a prime number
- 47 Mean of X20 and Z47
- 50 X12 divided by nine
- 51 One thousand five hundred fifty-eight less than Z29
- 53 Mean of Y25 and Y56
- 54 Y13 plus X49
- 55 X22 plus Y32
- 56 Five times a prime number

Z Direction

- 1 Z16 plus Y37
- 2 Nine thousand six hundred forty-nine more than Y3
- 4 Half of Y51, then subtract Y50
- 5 Y22 divided by sixteen
- 6 Seventeen times Y31
- 7 Seven times a prime number
- 8 X50 minus X12
- 9 Nineteen times a prime number
- 10 Seven thousand seven hundred fifty-two more than Z2
- 11 First two digits are the same as first two digits of Y4
- 12 X36 minus X12
- 13 Same as Z5
- 14 Fourteen times a prime number
- 15 Three times a prime number
- 16 Mean of Y47 and Y50
- 17 A prime number
- 18 Thirty-three times a square
- 19 A prime number
- 23 Thirty-two times a prime number
- 26 A prime number
- 29 Fifty-two times a prime number
- 30 Sixty-nine times a square
- 33 Twenty-two times Y40
- 45 Y47 plus Y28
- 47 Mean of Y40 and Z16

Solution:

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

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