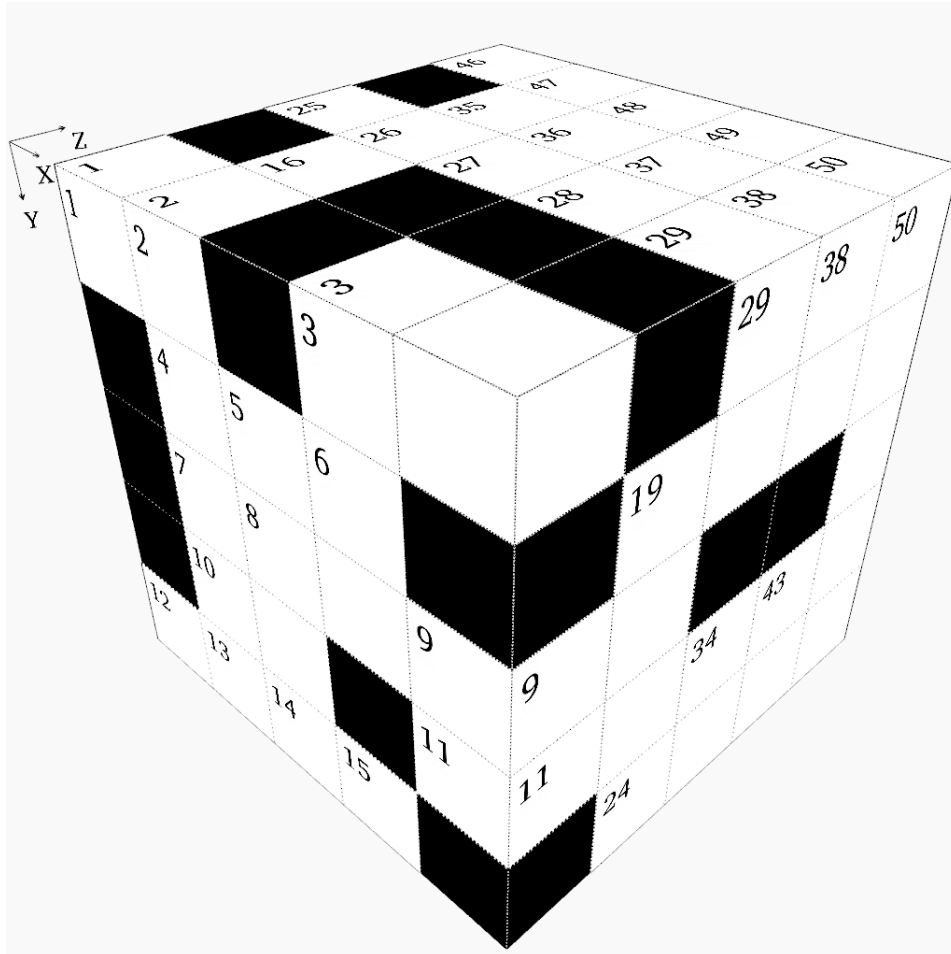


Difficulty: ★★★★★

Cube - Hard Puzzle #12



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

	35	36	37	38	46	47	48	49	50
39					51				
40								52	
41	42			43	53	54	55		
	44	45			56				

X Direction

- 1 Z42 plus half of Y29
- 3 Z9 minus Y34
- 4 X33 plus X1
- 7 Y18 times Z45
- 10 Z15 plus half of X44
- 12 Twenty-two times a prime number
- 17 Three thousand three hundred ninety-five less than X53
- 20 Mean of Y5 and Z42
- 22 Y37 divided by thirty-six
- 23 Fourteen thousand six hundred thirty-seven less than Y2
- 25 Twice a prime number
- 30 Ten thousand seven hundred eighty-six less than Y50
- 31 One hundred seventeen more than X12
- 33 Y55 plus X3
- 35 Mean of Z20 and Z7
- 39 A prime number
- 40 Twice a prime number
- 41 Eighty-seven times Z29
- 44 Y54 minus Y47
- 46 Twenty-two times a prime number
- 51 Z2 minus Y38
- 52 A square
- 53 A prime number
- 56 Seventy times a prime number

Y Direction

- 2 Two thousand twenty-one less than X17
- 3 Rearranged digits of Y16
- 5 Y50 minus Y49
- 9 Z32 divided by seven
- 16 Half of X25, then subtract Z6
- 17 Z21 minus Z9
- 18 Y34 minus X52
- 19 Eight hundred sixty-two more than Y37
- 22 X3 plus Y47
- 25 Rearranged digits of X31
- 26 X20 divided by three
- 27 Thirteen times a prime number
- 28 A prime number
- 29 Y3 minus Y39
- 34 Y9 reversed
- 35 Eighty-four times a prime number
- 36 Eight times a prime number
- 37 Seventy-two times Z12
- 38 Z33 minus Y55
- 39 A prime number
- 43 X7 divided by Z45
- 46 Seven times a prime number
- 47 X10 minus Z12
- 48 Z42 minus X44
- 49 A prime number
- 50 Twice the result of Z11 plus X52
- 54 Mean of Y55 and Z15
- 55 X7 divided by Y18

Z Direction

- 2 Thirteen thousand six hundred eighty-nine more than X23
- 4 Y46 minus X12
- 5 Mean of X46 and Z28
- 6 Four thousand three hundred twenty-nine less than X46
- 7 Eighteen times Y55
- 8 Seventy-nine times Y38
- 9 Y48 plus Y47
- 11 Three times a prime number
- 12 Z45 minus Y43
- 13 Half of X41, then subtract X3
- 14 Half of Z22, then subtract X31
- 15 Mean of Z14 and Y22
- 17 Y19 plus Z8
- 19 Last two digits are the same as last two digits of X51
- 20 Thirty times a prime number
- 21 Seventeen times a prime number
- 22 Twenty times a prime number
- 24 First two digits are the same as first two digits of Y50
- 27 Y3 minus Y34
- 28 Eight times Y38
- 29 X3 plus X20
- 32 Y27 minus half of Z24
- 33 Z45 plus Y38
- 42 Y9 minus X44
- 45 Y34 plus Y48

Solution:

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

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