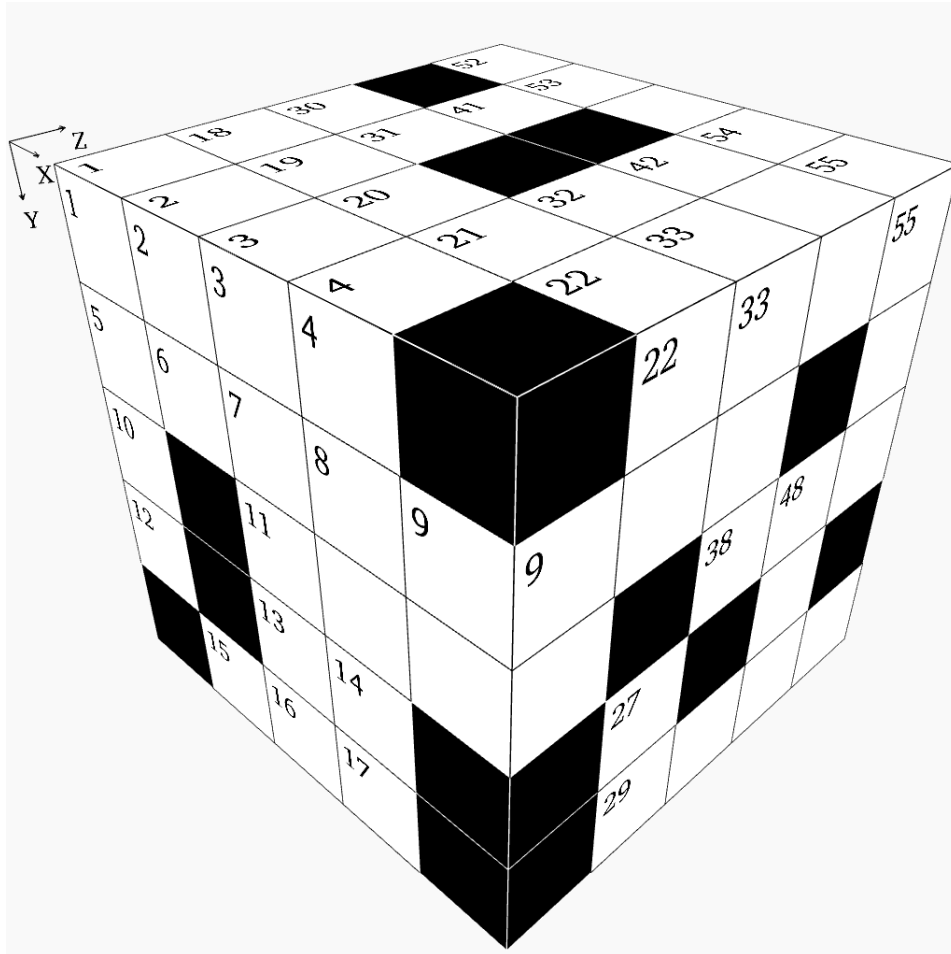


Difficulty: ★★★★★

Cube - Challenging Puzzle #9



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		18	19	20	21	22	30	31		32	33
5	6	7	8	9	23					34		35		
10		11			24							36	37	38
12		13	14		25			26	27			39		
	15	16	17		28				29	40				

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

X Direction

- 1 Y1 minus Z17
- 5 A palindrome
- 11 X43 plus X42
- 13 A square
- 15 Twice a prime number
- 18 Twice the result of Y19 plus X40
- 23 Three thousand three hundred sixty-two more than Z4
- 24 A square
- 25 X5 plus half of Y44
- 28 Two thousand seven hundred thirty-five more than Z2
- 30 Half of Y31, then subtract X13
- 32 Mean of Z46 and X57
- 34 Sixty-four times a prime number
- 36 X39 times X57
- 39 Half of Z17
- 40 Fourteen times a prime number
- 42 Mean of Y27 and Z28
- 43 Twice a prime number
- 45 A prime number
- 49 Thirty-five times a prime number
- 51 Z28 minus Z50
- 52 Eighty-three times a prime number
- 56 Y31 minus Z46
- 57 Y31 minus X13
- 58 Last two digits are the same as last two digits of Z37
- 59 Y18 plus half of X32

Y Direction

- 1 A prime number
- 2 X30 reversed
- 3 Fourteen times a prime number
- 4 Z29 times Z17
- 9 Z46 plus X39
- 18 Twenty-nine times a prime number
- 19 First three digits are the same as Z8
- 20 Four times a prime number
- 21 Z8 minus half of X15
- 22 X57 plus X56
- 26 Same as X32
- 27 X13 plus Y26
- 30 Twenty-four times a prime number
- 31 Six times Y21
- 32 Seventy-nine times a prime number
- 33 Thirty-one times Z3
- 35 Thirty-eight times a prime number
- 41 X56 plus half of Z10
- 43 Twice the result of X45 minus X52
- 44 Eighty-five times a square
- 47 Y9 minus Y21
- 48 X11 minus half of Y47
- 52 Twenty-eight times Z3
- 53 X58 plus half of Z7
- 54 Seventeen times a square
- 55 Nine times a prime number

Z Direction

- 1 X57 plus Z46
- 2 A prime number
- 3 Mean of Y21 and X30
- 4 Seven thousand seven hundred twenty-nine more than X49
- 5 A prime number
- 6 Half of X34, then subtract Y2
- 7 Six times a prime number
- 8 A square
- 9 Z50 times Z3
- 10 Seven thousand six hundred eighty-one less than X52
- 11 Three thousand seven hundred ten less than X28
- 12 X39 plus Y1
- 13 X57 times Y21
- 14 Nineteen thousand thirty-five less than Z16
- 15 Five thousand twelve less than X34
- 16 Five thousand five hundred fifty-two less than Z11
- 17 Y26 minus X51
- 22 Three times a prime number
- 28 Z46 plus X13
- 29 Y1 plus Y22
- 37 A prime number
- 38 Twenty-seven times a prime number
- 46 Half of X28, then subtract Y54
- 50 Mean of X32 and X56

Solution:

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