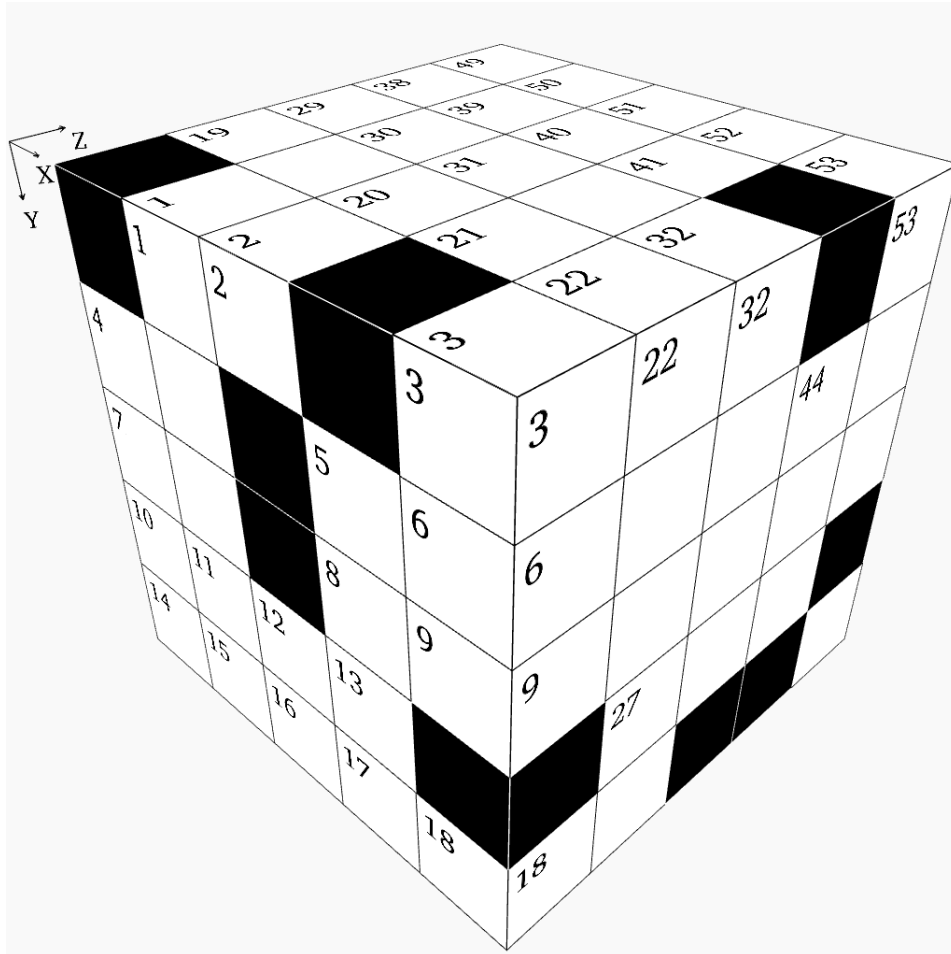


Difficulty: ★★★★★

Cube - Hard Puzzle #7



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	29	30	31	32	
4	5	6	23	24	25	26	27	33	34		
7	8	9	28	29	30	31	32	35			
10	11	12	13	14	15	16	17	18	25	26	
14	15	16	17	18	25	26	27	36			
38	39	40	41	42	43	44	49	50	51	52	53
42	43	44	45	46	47	48	54	55	56	57	58
45	46	47	48	49	50	51	52	53	54	55	56
46	47	48	49	50	51	52	53	54	55	56	57
47	48	49	50	51	52	53	54	55	56	57	58
49	50	51	52	53	54	55	56	57	58	59	60

X Direction

- 1 X7 divided by four
- 4 Y26 minus X45
- 5 Sum of digits in Y3
- 7 Mean of Z43 and Y26
- 8 X4 minus Z13
- 10 Sixty-two times a prime number
- 14 Z12 plus half of X19
- 19 Six times a prime number
- 23 Y51 plus half of Z43
- 24 A prime number
- 25 A prime number
- 28 X42 plus half of Y39
- 29 Sixty-three times a prime number
- 33 A square
- 35 Ninety-eight times X45
- 36 Y51 plus X5
- 37 Twice Y53
- 38 Fourteen times Z3
- 42 Twenty-seven times a prime number
- 45 Y12 minus Y36
- 47 Mean of Z48 and X1
- 49 Half of Y50, then subtract Z21
- 54 Eighty-four times a prime number
- 55 X23 minus X45
- 56 X8 plus X47
- 57 Ninety-three times a prime number
- 59 Fourteen thousand one hundred twenty-nine less than X28

Y Direction

- 1 A prime number
- 3 X55 plus X7
- 4 Z8 times Z13
- 5 A prime number
- 12 Z17 minus X8
- 19 Twice a prime number
- 20 Twice a prime number
- 21 Three thousand five hundred twelve more than Y50
- 22 Four times a prime number
- 26 Z13 plus X55
- 29 X56 minus Y12
- 30 Mean of Y52 and X1
- 31 Twice the result of Y1 plus Z16
- 32 X33 plus half of X38
- 36 Z17 minus X55
- 38 A square
- 39 Twice a prime number
- 40 Half of Y19, then subtract X29
- 41 Z7 minus Y46
- 44 Fourteen times X55
- 46 Y12 minus X45
- 50 Thirteen thousand four hundred one more than Y2
- 51 Y41 plus X47
- 52 Sixteen thousand nine hundred thirteen less than Y21
- 53 X33 minus Z17
- 55 Z9 divided by Z27
- 58 X59 minus half of Z10

Z Direction

- 1 Thirty-two times a prime number
- 2 A prime number
- 3 X4 plus Y51
- 4 Mean of Y38 and Z1
- 5 Y41 divided by four
- 6 Last two digits are the same as last two digits of Y50
- 7 Y26 minus X8
- 8 Rearranged digits of Z15
- 9 First two digits are the same as first two digits of Y44
- 10 Last two digits are the same as last two digits of Y39
- 11 Thirty times X5
- 12 Y44 minus Z11
- 13 X38 divided by ninety-four
- 14 Mean of Z6 and Z11
- 15 Mean of Z3 and X23
- 16 Eighty-five times a square
- 17 X55 plus Y46
- 18 A square
- 19 Z35 plus Z23
- 21 Five times a prime number
- 23 Three times a prime number
- 24 Z3 plus Z8
- 27 Mean of Z15 and Z3
- 34 Twice a prime number
- 35 A square
- 43 Z27 minus Z17
- 48 Z15 minus X4

Solution:

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

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