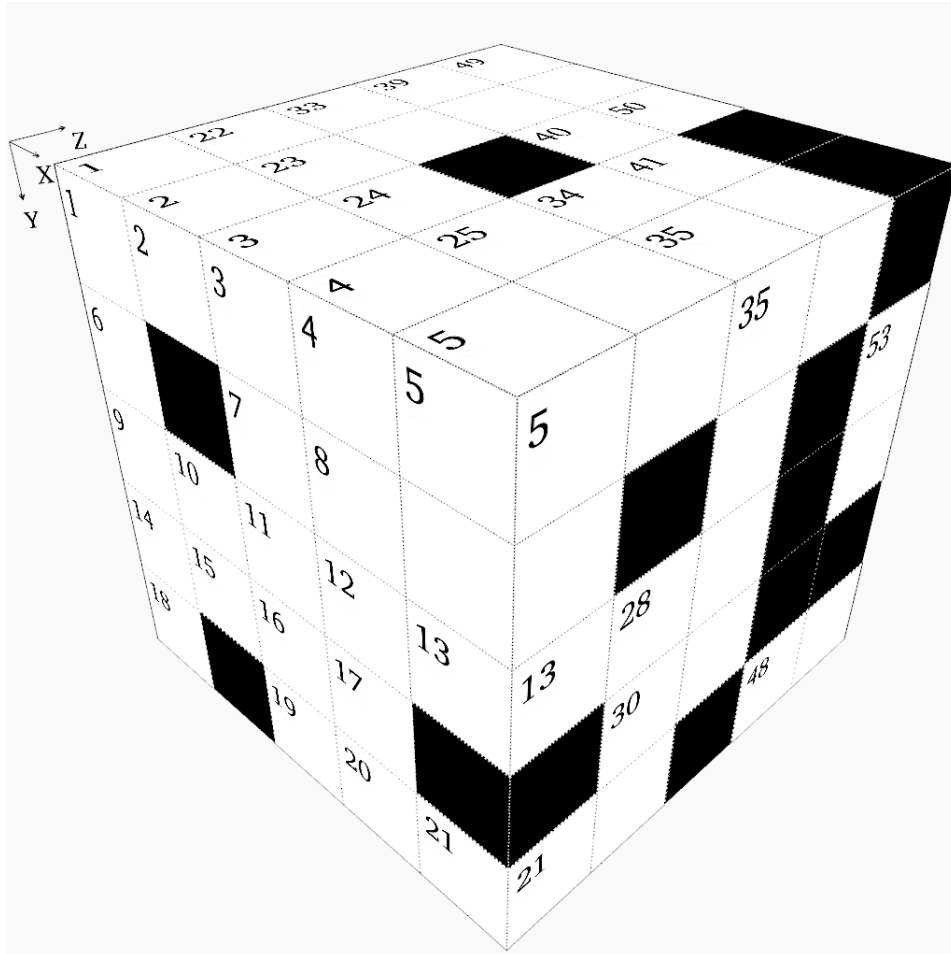


Difficulty: ★★★★★

Cube - Hard Puzzle #20



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

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

X Direction

- 1 Mean of X37 and Y45
- 7 One-fifth of Y5
- 9 Fifteen times a prime number
- 14 Sixty-nine times Z45
- 19 Y28 plus Z30
- 22 Y25 minus Z3
- 26 Eleven times X51
- 27 A palindrome
- 29 Sixteen thousand seven hundred sixty-seven less than X31
- 31 A prime number
- 33 Twice the result of Z32 minus Y52
- 34 Z40 minus X56
- 36 X49 minus Y53
- 37 Twenty-six times a prime number
- 38 Five times a prime number
- 39 Last two digits are the same as last two digits of Y3
- 42 Twice the result of Y25 minus X22
- 43 Z19 minus Y53
- 44 A prime number
- 46 A prime number
- 49 X51 minus Y39
- 51 Half of Z13, then subtract Z48
- 54 Sum of digits in Z17
- 56 Three-fourths of Y53
- 57 Same as X34
- 58 A prime number

Y Direction

- 1 Ninety-nine times a prime number
- 3 Three times a prime number
- 4 Ten thousand nine hundred twenty-five less than X58
- 5 Five times a prime number
- 10 Half of Z9, then subtract X49
- 22 X58 minus X39
- 23 Mean of Z20 and Z14
- 24 A prime number
- 25 First two digits are the same as Y10
- 28 Z12 divided by X43
- 33 Mean of Y50 and Z7
- 34 One thousand one hundred twenty-five more than Y35
- 35 Twenty-five times a prime number
- 36 Mean of Y55 and Z46
- 39 Y10 minus X34
- 40 Eight times a prime number
- 41 Twelve thousand one hundred seventy-two less than X29
- 44 Z19 minus half of Z3
- 45 Mean of Z21 and Z30
- 50 Z47 plus Z40
- 52 Three times a prime number
- 53 Mean of Z30 and Y39
- 54 Mean of X56 and Y55
- 55 X1 divided by eighty-one

Z Direction

- 1 One thousand two hundred seventy-four more than X1
- 2 First two digits are the same as first two digits of Y36
- 3 Z47 minus X34
- 4 X43 times Z30
- 5 A prime number
- 6 Consecutive digits unordered
- 7 Half of Y40, then subtract Y34
- 8 Nine times a prime number
- 9 Twice a prime number
- 10 Eight times Z47
- 11 Mean of Z6 and Y35
- 12 Fifty-one times a prime number
- 13 Six times a prime number
- 14 Four hundred twenty-three less than Y41
- 15 Z21 minus Z47
- 16 X14 minus Z21
- 17 Two thousand one hundred thirty-three more than X39
- 18 Sum of digits in Y1
- 19 Z15 plus X43
- 20 Three times a prime number
- 21 Mean of Y50 and Y45
- 30 Mean of Z45 and X43
- 32 Forty-four times a prime number
- 40 A square
- 45 Z46 minus Y39
- 46 Y4 divided by Y55
- 47 Z46 minus X43
- 48 Z15 minus X54

Solution:

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

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