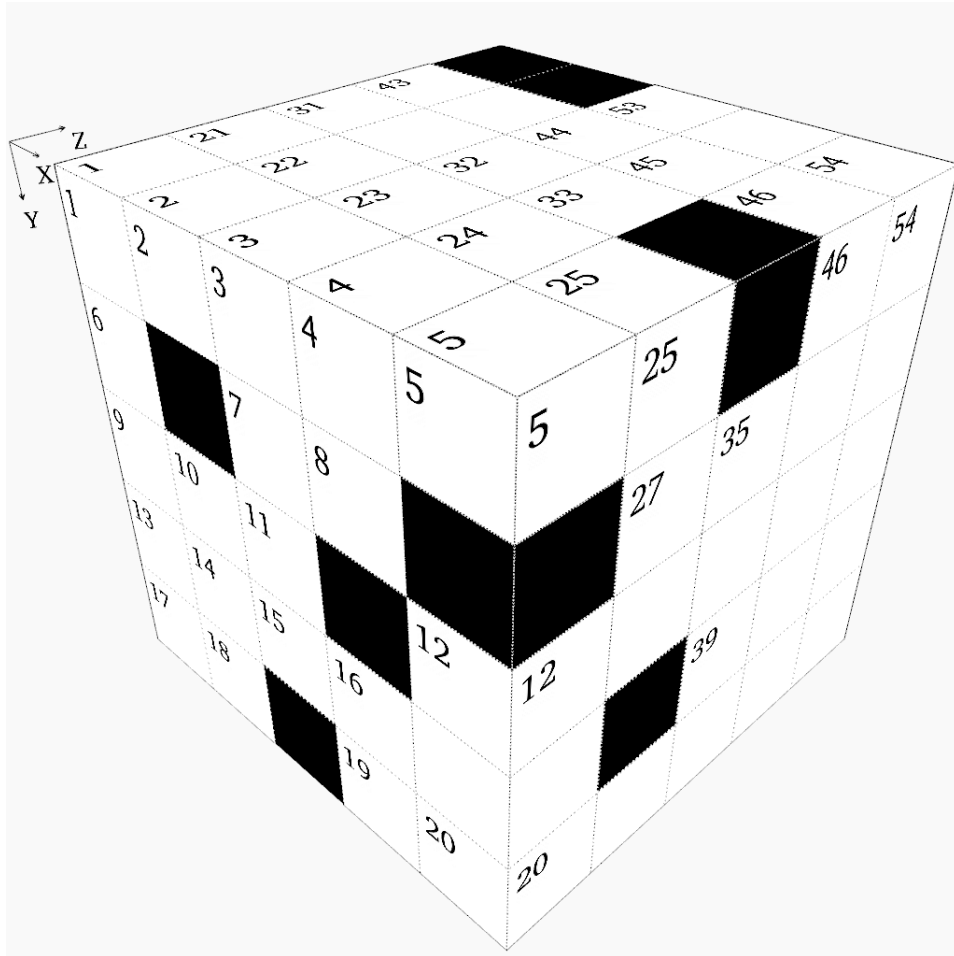


Difficulty: ★★★★★

Cube - Hard Puzzle #23



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	21	22	23	24	25	31		32	33	
6		7	8		26				27			34		35
9	10	11		12		28				36				
13	14	15	16		29							37	38	39
17	18		19	20	30							40	41	42

43		44	45	46			53		54
		47			55	56			
		48	49			57		58	
50	51				59				
52					60				

X Direction

- 1 Six times a prime number
- 7 Mean of Y38 and Z17
- 9 Mean of Z39 and Y56
- 13 A prime number
- 17 X7 minus Y16
- 19 Y23 divided by Y33
- 21 A palindrome
- 26 Mean of Z3 and X31
- 28 Twice a prime number
- 29 A square
- 30 Z51 divided by four
- 31 Thirty-four times a prime number
- 34 Thirty-five times a prime number
- 37 Z42 plus Y45
- 40 Consecutive digits unordered
- 43 Two thousand seven hundred ninety-two less than X60
- 47 Nine times a prime number
- 48 Six times a prime number
- 50 X7 plus Y21
- 52 Thirty-nine times a prime number
- 53 X9 minus Y33
- 55 Mean of Z41 and Z5
- 57 A prime number
- 59 Fourteen thousand ninety-two less than Y53
- 60 Ten thousand three hundred ninety-five more than X13

Y Direction

- 1 A prime number
- 3 Four times a prime number
- 4 Y51 plus Y16
- 10 Y59 plus Y45
- 12 Y59 plus Z42
- 16 X7 minus Z17
- 21 Twice the result of X1 minus Y46
- 22 Twelve times a prime number
- 23 Mean of X40 and Z42
- 24 Sixteen times a prime number
- 25 Half of X29, then subtract Z8
- 29 Z36 plus Z52
- 31 A prime number
- 32 Mean of Z52 and Y21
- 33 Y45 minus Z11
- 35 Last two digits are the same as Z11
- 37 Z48 minus X7
- 38 X37 plus X30
- 43 Last two digits are the same as X50
- 44 Z18 divided by Y37
- 45 Y29 plus X7
- 46 Six thousand nine hundred ninety more than Z12
- 51 Y38 minus X30
- 53 Five thousand nine hundred thirty-four more than Z13
- 54 Rearranged digits of Z20
- 56 Mean of Y24 and X55
- 58 Z39 minus X19
- 59 Z48 minus Z10

Z Direction

- 1 Twenty-six times a prime number
- 2 Y33 plus X31
- 3 Four times a prime number
- 4 Three thousand one hundred fifty-six more than X1
- 5 Y33 plus Z10
- 6 Half of Y43, then subtract Z27
- 7 Mean of Y24 and Y53
- 8 Eighty-five times Z11
- 10 Half of X43, then subtract Z7
- 11 Y4 minus X19
- 12 Z7 minus Z16
- 13 Eight thousand eight hundred twenty-eight less than X43
- 14 Z16 minus Y59
- 15 Y10 plus X37
- 16 Y45 plus Y21
- 17 X50 minus Y38
- 18 Y51 times Y44
- 20 Y53 minus X53
- 27 A prime number
- 36 Y35 divided by Y12
- 39 X21 minus Y54
- 41 Twice the result of Y45 minus Z49
- 42 X30 plus Z39
- 46 X55 minus Y59
- 48 X9 divided by Y16
- 49 Z46 minus Y16
- 51 Twice the result of Y59 minus Z46
- 52 Z15 divided by Z36

Solution:

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

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