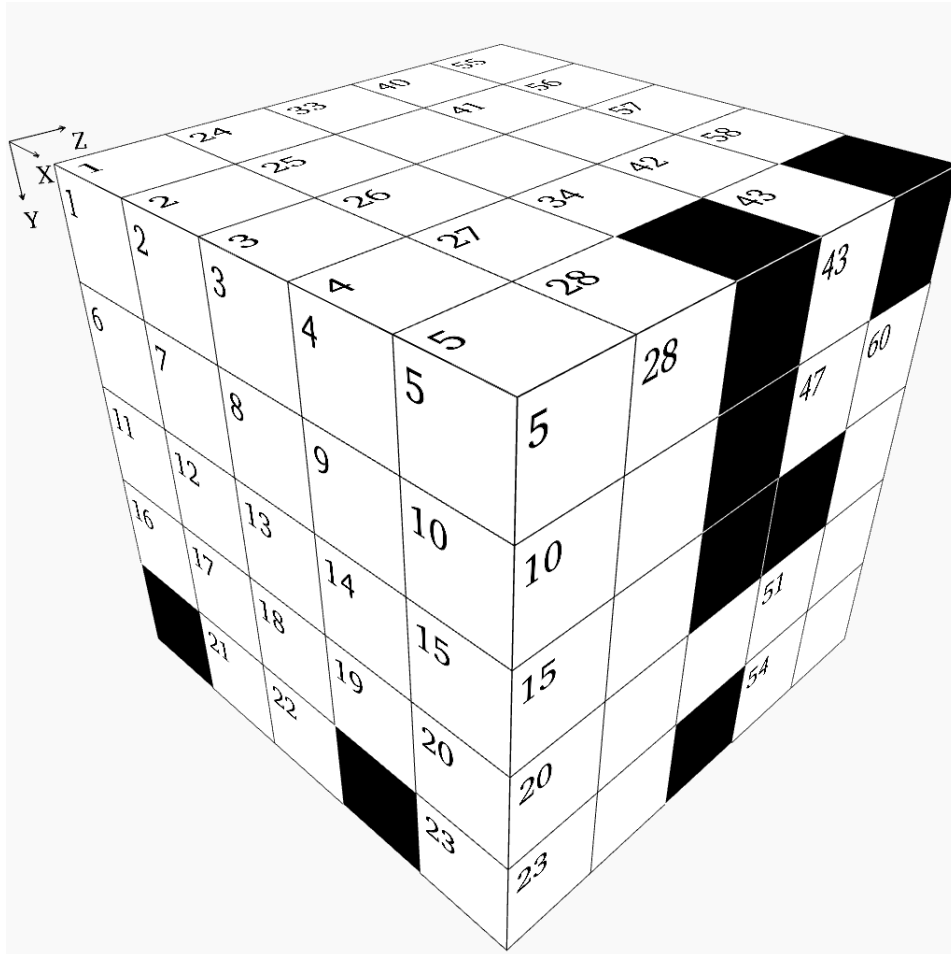


Difficulty: ★★☆☆☆

Cube - Challenging Puzzle #45



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

40	41		42	43	55	56	57	58	
44	45		46	47	59				60
48						61			
49		50		51					
52		53		54			62		

X Direction

- 1 X62 times X48
- 6 Y24 plus Z47
- 11 Eight hundred five less than Y42
- 16 Twice the result of Y42 minus Y2
- 21 Z13 plus Z16
- 24 X59 minus Y51
- 29 Twenty-seven times a prime number
- 30 Seventy times a prime number
- 31 X11 minus half of Y57
- 32 X44 plus Z13
- 33 Twice a prime number
- 35 Z32 minus X61
- 37 Sixty times a prime number
- 38 Z39 minus Z13
- 40 Two thousand nine hundred thirty-three more than X16
- 44 Y5 minus half of X30
- 46 X44 plus Z54
- 48 Z15 minus Z7
- 49 Three times a prime number
- 52 Two thousand eight hundred six less than Z20
- 55 Half of Y41, then subtract Z18
- 59 X24 plus half of Z23
- 61 Mean of X21 and X38
- 62 A prime number

Y Direction

- 1 Rearranged digits of X55
- 2 Two thousand six hundred twenty-five more than X31
- 3 Sixty-two times a prime number
- 4 First two digits are the same as first two digits of Z32
- 5 Ninety-nine times a prime number
- 24 X6 minus X35
- 25 Ten times Y60
- 26 X44 plus Y41
- 27 Two hundred seventy-three more than X37
- 28 Ten times a prime number
- 34 A prime number
- 36 Twice the result of X32 plus Z32
- 40 Fifty-six times a prime number
- 41 Seven hundred ninety-one less than X49
- 42 Four thousand seven hundred ninety-nine more than Z2
- 43 Mean of Z13 and Z45
- 50 Mean of Z45 and X61
- 51 Half of X33, then subtract Z19
- 55 X32 minus X21
- 56 Z8 plus X46
- 57 Fifty-two times a prime number
- 58 Z39 minus X38
- 60 Half of X37, then subtract Z10

Z Direction

- 1 Four times a prime number
- 2 Sixty-three times a prime number
- 3 A prime number
- 4 Nineteen times a prime number
- 5 Z8 minus Z23
- 6 Z54 minus X44
- 7 Half of Z13, then subtract Z53
- 8 A square
- 9 Last two digits are the same as last two digits of Y41
- 10 Y58 minus Z5
- 11 Six hundred sixty-seven less than Z21
- 12 Seven thousand five hundred thirty-two less than Y26
- 13 Z44 plus X44
- 14 One thousand five hundred eight less than Y27
- 15 Z16 plus X38
- 16 A square
- 17 Fifty-three times a prime number
- 18 Forty-two times a prime number
- 19 Four times a prime number
- 20 Fifty-nine times a square
- 21 Mean of X29 and Y60
- 22 Half of Z9, then subtract X40
- 23 Mean of X48 and Z6
- 32 Z49 plus Z8
- 39 Z5 plus Z49
- 44 Twice Z16
- 45 Mean of Y56 and Y55
- 47 Y56 minus Y50
- 49 Mean of Z53 and Y56
- 53 X48 minus Y51
- 54 X32 minus Z8

Solution:

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

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