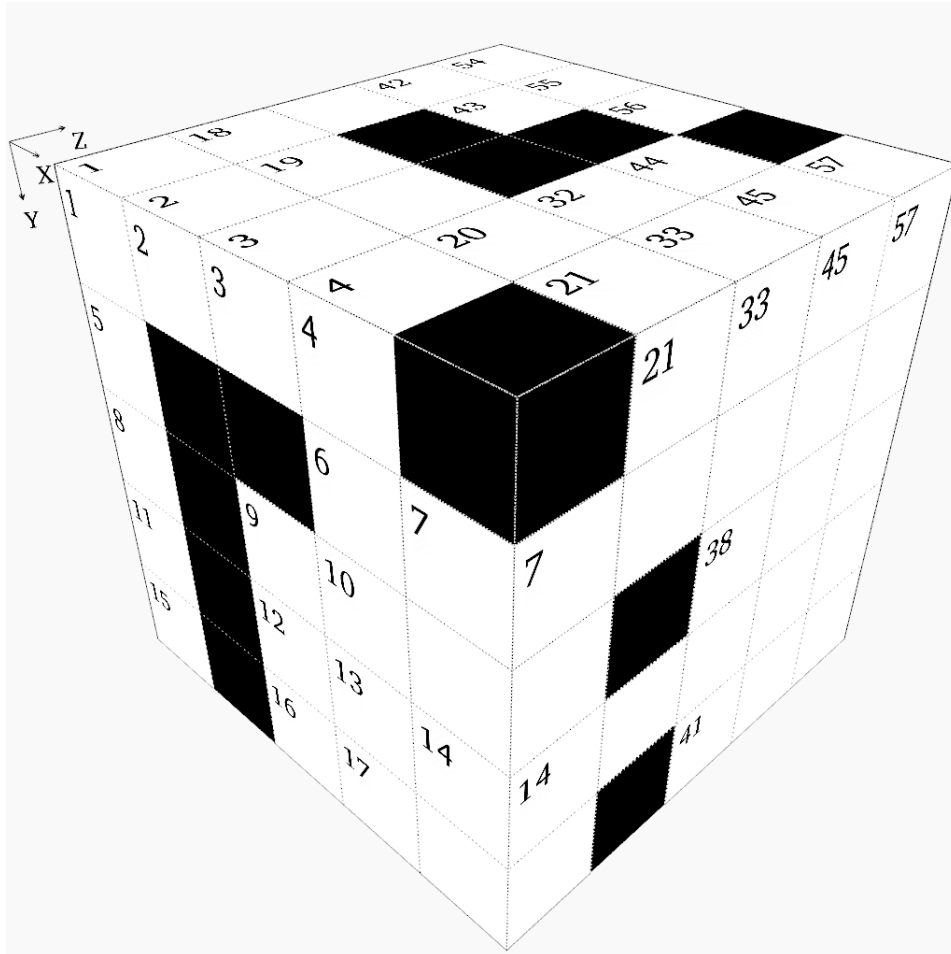


Difficulty: ★★★★★

Cube - Hard Puzzle #40



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				32	33
5			6	7	22	23		24					34	35
8		9	10		25	26	27					36	37	38
11		12	13	14	28	29						39		
15		16	17		30	31						40		41

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

X Direction

- 1 One thousand five hundred forty-five less than X60
- 6 Z12 minus Y47
- 9 X12 plus Y37
- 12 Y36 minus X54
- 16 Mean of Z5 and Z29
- 18 A prime number
- 22 Mean of Z3 and X35
- 24 Y37 minus Z31
- 25 Nine times a prime number
- 28 Z41 times X32
- 30 A palindrome
- 32 Mean of Y54 and Y21
- 35 X44 minus Z47
- 36 A prime number
- 39 Z43 plus X54
- 40 Twice the result of Z14 plus Y7
- 42 Mean of Y49 and Z52
- 44 Z43 plus X53
- 48 Nineteen thousand nine hundred sixty-one more than Y18
- 51 Y37 minus X22
- 52 Y21 minus Z46
- 53 A square
- 54 Twice the result of X9 minus Z23
- 58 A prime number
- 60 One thousand two hundred forty-four less than Z21
- 61 Nine thousand three hundred fifty-two less than Y1
- 62 Nine thousand two hundred twenty-nine less than Y55

Y Direction

- 1 Six thousand five hundred seventy-three less than Y19
- 4 One thousand one hundred thirty-two less than Z9
- 7 Rearranged digits of X30
- 9 Z5 plus Y37
- 18 First two digits are the same as X44
- 19 Twice the result of Z17 minus Z46
- 20 Z8 times Y54
- 21 Y56 minus Z11
- 27 Four times a prime number
- 32 Z52 plus X42
- 33 Twenty-four times a prime number
- 34 Z15 minus Y4
- 36 X16 minus Y21
- 37 Y36 minus X39
- 42 Five times a square
- 45 Mean of Z1 and Y27
- 47 Twice the result of Z5 minus X44
- 49 Z12 minus X44
- 50 Twice the result of X39 minus Z13
- 54 Y49 plus half of Z2
- 55 X61 plus Z7
- 56 Four thousand three hundred fifty-one more than Y45
- 57 Twenty-three times a prime number
- 59 Sixteen times a prime number
- 61 Z29 minus half of X30

Z Direction

- 1 Twice a prime number
- 2 Z43 minus X35
- 3 X32 minus Z52
- 4 First two digits are the same as X53
- 5 Z31 plus Z52
- 6 Seven times a prime number
- 7 Last two digits are the same as last two digits of Z29
- 8 X62 divided by X32
- 9 Sixty-six times a square
- 10 Z43 plus Z47
- 11 Six hundred sixty more than Z17
- 12 X32 plus Z47
- 13 Z5 minus X52
- 14 Nineteen times a prime number
- 15 Thirty-two times a prime number
- 16 Z2 plus X16
- 17 Seven hundred fifty less than Y56
- 21 A prime number
- 23 Mean of X44 and X22
- 26 One thousand forty-nine less than X60
- 29 Z21 reversed
- 31 A square
- 38 Y9 plus half of Z3
- 41 Eleven times a prime number
- 43 Y20 divided by Z8
- 46 X53 plus Z47
- 47 Z10 minus Y54
- 50 Twice the result of Z12 minus Y32
- 52 Z31 minus X22

Solution:

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

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