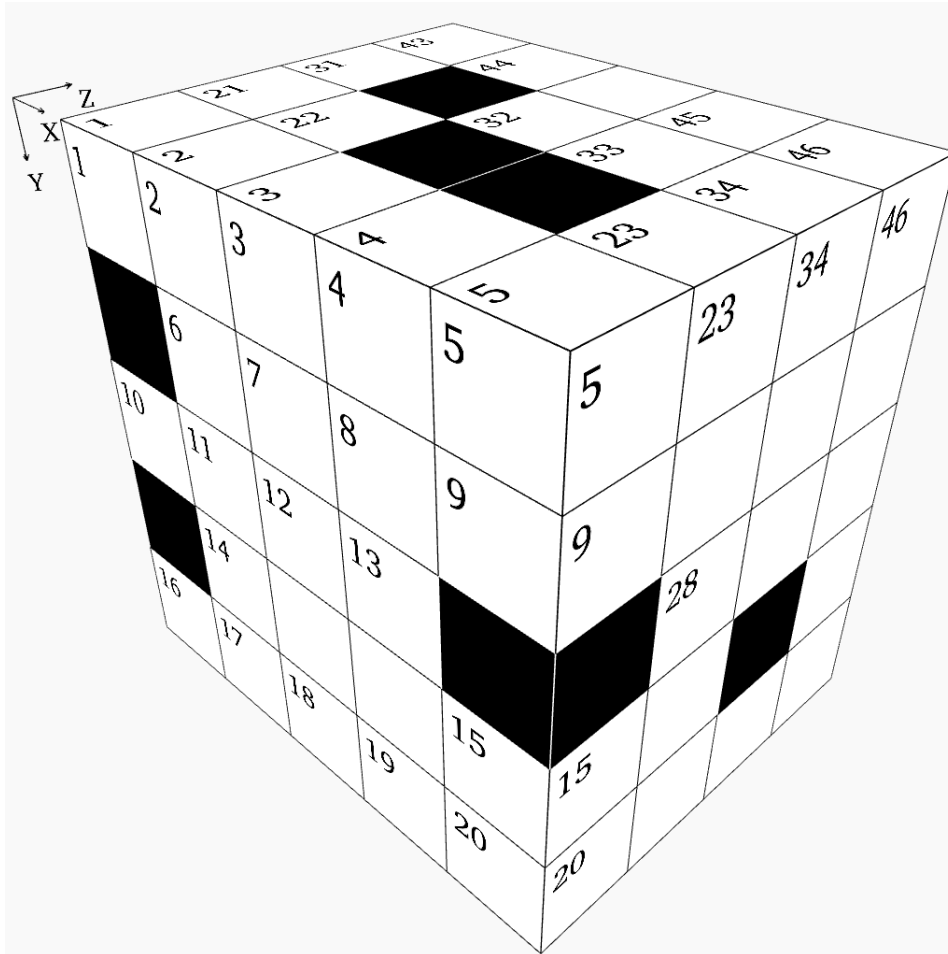


## Box - Challenging Puzzle #69



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 box pictured above and divide it into individual X-Y layers, we will get these planes:

1	2	3	4	5	21	22			23	31		32	33	34
	6	7	8	9	24		25	26		35				
10	11	12	13		27				28			36	37	
	14			15	29					38	39		40	
16	17	18	19	20	30					41			42	
					43	44		45	46					
					47			48						
						49								
					50			51						
					52									

### X Direction

- 1 Nineteen times a prime number
- 6 X35 plus Z24
- 10 Y44 minus half of Z10
- 14 Mean of X38 and X29
- 16 A prime number
- 21 Z40 minus Y26
- 24 Three thousand nine hundred fifty-nine more than Y4
- 27 Mean of Y23 and X1
- 29 Z8 plus Z18
- 30 Three times a prime number
- 32 Half of Y34
- 35 Z7 plus Z28
- 36 Mean of Z16 and Y43
- 38 Two thousand three hundred two less than X10
- 41 X47 minus Y15
- 42 Mean of Y45 and X21
- 43 Sixty-one times a prime number
- 47 X49 plus Y51
- 48 Z15 minus Y45
- 49 X48 plus Y5
- 50 Z13 minus Z10
- 51 Mean of X47 and Z32
- 52 A prime number

### Y Direction

- 2 A prime number
- 3 Seven thousand two hundred forty-six less than Y22
- 4 Y23 minus Y31
- 5 Half of Y50, then subtract X48
- 15 Half of Z12, then subtract Z20
- 21 Eighty-eight times a prime number
- 22 Two thousand one hundred forty-three less than X52
- 23 One thousand fifty-five more than Y3
- 25 Y51 plus X41
- 26 X21 minus X41
- 31 Eighty-three times a prime number
- 32 Eleven times a prime number
- 34 Eight times a prime number
- 37 X30 minus Y31
- 39 A square
- 43 Six times Y5
- 44 Rearranged digits of Y46
- 45 X51 minus half of Z15
- 46 One thousand two hundred eighty-two more than X10
- 50 Mean of Z18 and Z11
- 51 Z2 minus X50

### Z Direction

- 1 Three times a prime number
- 2 Y51 plus Y15
- 5 X6 plus Y34
- 6 Mean of Z17 and Y39
- 7 X32 plus Z8
- 8 Y25 minus X42
- 9 Sixty-nine times Y39
- 10 Z13 minus Y15
- 11 Mean of X21 and Y25
- 12 Eighty-one times X42
- 13 Half of Z6
- 14 Nine times a prime number
- 15 Three-fourths of Y51
- 16 Y21 divided by X42
- 17 Three times a prime number
- 18 Z28 divided by Z32
- 19 X21 times Y43
- 20 Y34 plus X6
- 24 Twice a prime number
- 28 Six times X47
- 29 Y26 times Z33
- 32 X42 minus Z18
- 33 Y51 minus Y5
- 40 X42 plus Y45

**Solution:**

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