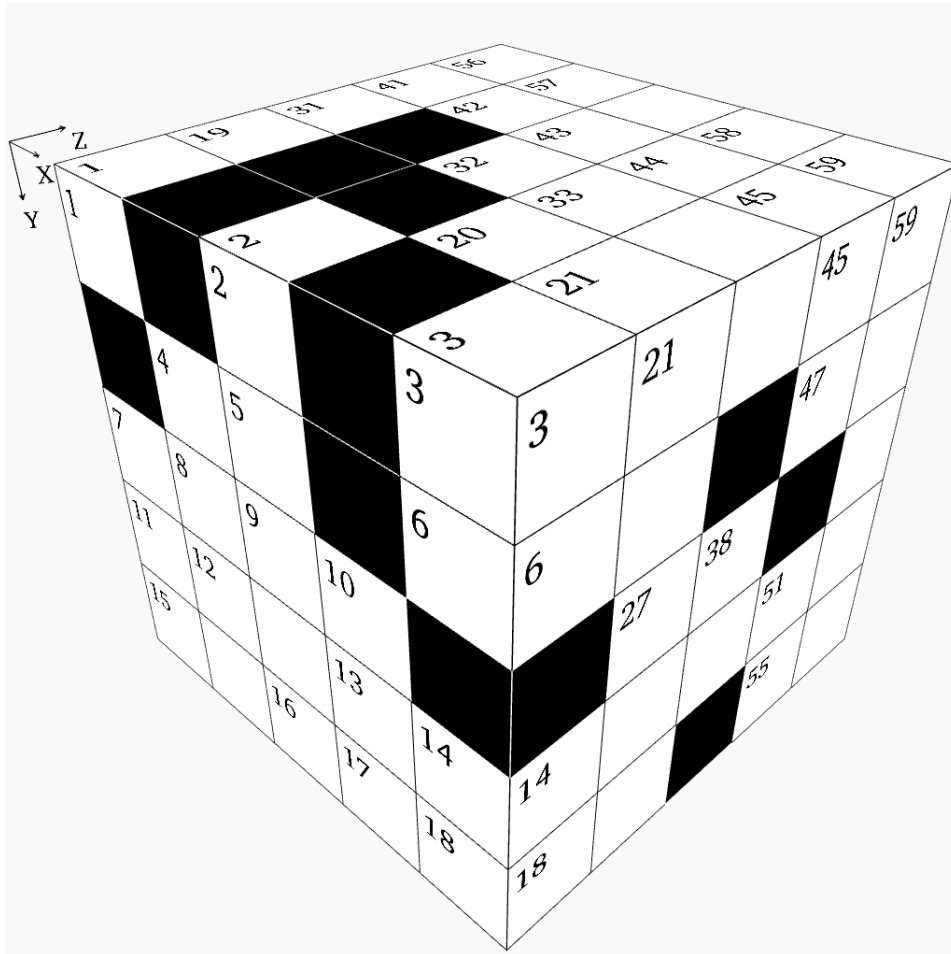


Difficulty: ★★☆☆☆

## Cube - Challenging Puzzle #2



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	19			20	21	31		32	33		
		4	5		6	22	23	24		34	35		36		
7	8	9	10			25		26	27	37					38
11	12		13	14	28			29		39			40		
15		16	17	18				30							

41	42	43	44	45	56	57		58	59
46				47	60			61	
		48						62	63
			49	50	51	64			
52	53	54		55					

### X Direction

- 4 Z22 divided by Y41
- 7 Nineteen times a square
- 11 A palindrome
- 15 Six times a prime number
- 20  $X4 - Z47$
- 22 Mean of Y10 and X39
- 25 A prime number
- 28 Mean of Y38 and Y50
- 29  $X7$  divided by X48
- 30 A square
- 32 Twice Y45
- 34 Sixty-five times a prime number
- 37 Seven hundred sixty-six less than Y57
- 39  $Z54 + Y41$
- 40 Z6 reversed
- 41 Six thousand one hundred forty-seven less than Y43
- 46 Five times a prime number
- 48  $X61 + Z18$
- 49 Twice a prime number
- 52  $Z1 - Y2$
- 56 Its digits total Z27
- 60 X4 reversed
- 61 A square
- 62  $Z16 \times Z42$
- 64 Half of Z9, then subtract Z7
- 65  $X20 + X4$

### Y Direction

- 2 Four thousand eight hundred seventy-seven less than Z8
- 3  $Z47 - Z54$
- 4 Fifty-six times X32
- 7 Mean of Z7 and Y26
- 10  $X65 + Y7$
- 14 Twice the result of  $X32 - Z6$
- 19 Twenty-five times a prime number
- 21 Eighty-six times a square
- 23  $X61 + \text{half of } Y10$
- 24  $X39 - Z16$
- 26 Five times X40
- 31 Ten times a prime number
- 32  $X29 + Z6$
- 33 Two-fifths of X56
- 35  $Y41 + Z11$
- 38 Mean of X20 and Z47
- 41  $X32 - Z53$
- 42 Thirteen times X28
- 43 Its digits total X28
- 44  $X60 - \text{half of } Y51$
- 45  $X34$  divided by Y24
- 50 Half of X39, then subtract X20
- 51 Mean of X32 and Z42
- 56  $X48 + Y41$
- 57 Seven times a prime number
- 58 Eight times a prime number
- 59 First three digits are the same as Z36
- 63  $Y35 - Y41$

### Z Direction

- 1 Seven hundred thirty-three less than Z14
- 3 Mean of Z8 and Y7
- 4 A prime number
- 5 Nineteen times a prime number
- 6  $X32 - Y41$
- 7  $Z10 - Z47$
- 8 Last two digits are the same as last two digits of X64
- 9 Seven thousand seven hundred forty-one less than Y57
- 10 Consecutive digits in descending order
- 11 Same as Y63
- 12  $Y35 + Z18$
- 13 Seven thousand nine hundred seventy-one more than X25
- 14  $X37 - Z36$
- 15  $X65 \times X40$
- 16 A square
- 17  $Y51 \times Z49$
- 18  $Y4$  divided by Y42
- 20 Twenty-four times X65
- 22 Mean of Z17 and Y32
- 27 Mean of Y41 and Y44
- 32  $Z17$  divided by Z55
- 36 Three times Y32
- 42  $X4 - Y38$
- 47 Mean of Z42 and Z49
- 49  $X65 - Y44$
- 53  $X40$  reversed
- 54  $Z12$  divided by twenty-four
- 55  $X60 - Y44$

**Solution:**

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

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