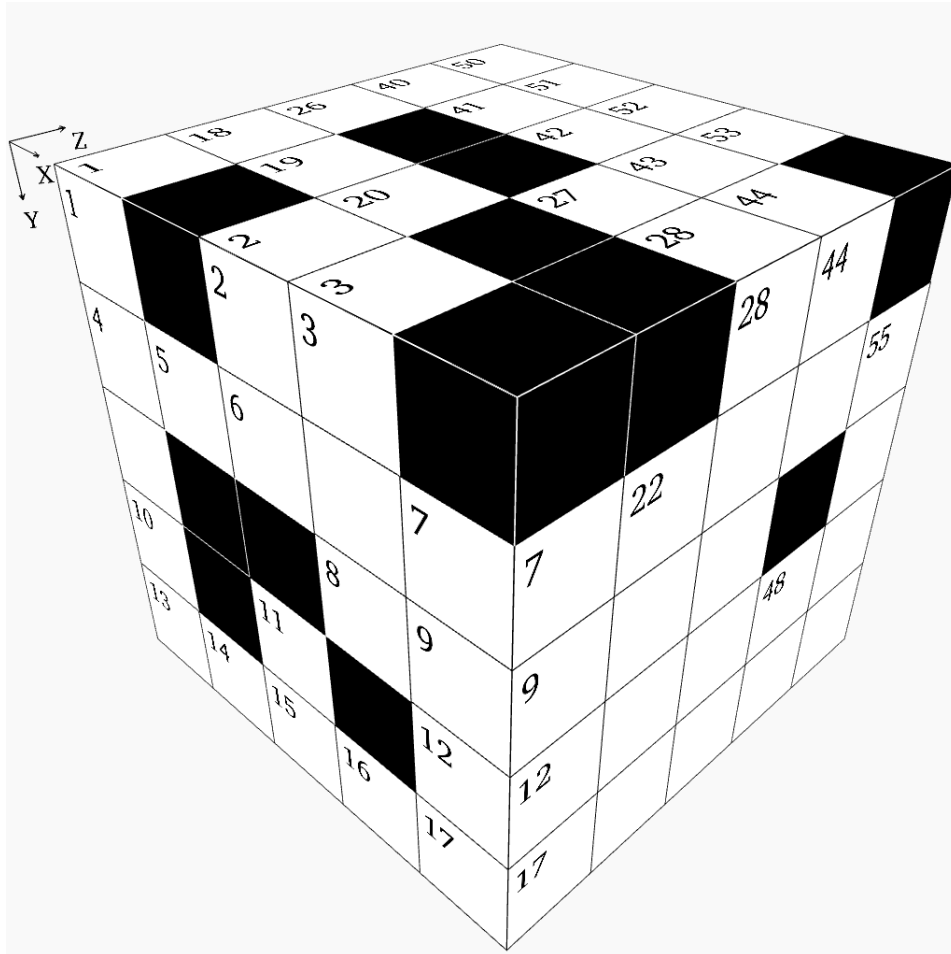


Difficulty: ★★★★★

## Cube - Hard Puzzle #17



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

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

### X Direction

- 2 X21 minus Y18
- 4 Eight times a prime number
- 8 Sum of digits in Y55
- 13 Seventy-seven times a square
- 18 Thirteen times Y47
- 21 Y11 plus half of Y44
- 24 Y47 plus X8
- 25 Y41 divided by Y47
- 27 Y11 minus Z41
- 29 A prime number
- 33 Thirty-one times a prime number
- 36 Mean of Y26 and X58
- 39 A prime number
- 40 Y41 minus Z35
- 45 Thirty-seven times a square
- 46 Y3 minus Z41
- 47 Three times a prime number
- 49 Twenty-eight times a prime number
- 50 Half of Z5, then subtract Z12
- 54 Eleven times a prime number
- 56 Z1 minus Z7
- 57 Z27 minus Y47
- 58 Y53 plus Z41
- 59 X46 minus Y11

### Y Direction

- 1 Mean of Z6 and Z15
- 2 Mean of Y24 and Y40
- 3 X46 plus Z2
- 7 Eight times a prime number
- 11 Z27 minus X2
- 18 X21 minus Z35
- 19 Z32 plus Z2
- 20 X58 minus Y48
- 22 Six hundred thirty-five more than Z23
- 24 Mean of X24 and Z42
- 26 Thirteen thousand eight hundred twenty-three less than Z1
- 27 Y50 plus Z27
- 28 Mean of Z17 and X18
- 30 Twice a prime number
- 31 Y40 times X2
- 40 X8 plus Y47
- 41 Y2 plus X40
- 42 Z14 minus X47
- 43 Rearranged digits of Y41
- 44 Z38 minus Y48
- 47 Y31 minus Y55
- 48 Y52 divided by thirty-six
- 50 Fifty-six times a prime number
- 51 Seventeen thousand nine hundred fifty-two less than Z5
- 52 Mean of Z16 and Y53
- 53 Two-thirds of Y47
- 55 Four times a prime number

### Z Direction

- 1 A prime number
- 2 X58 minus Y53
- 4 A prime number
- 5 Eight times a prime number
- 6 Consecutive digits unordered
- 7 A prime number
- 9 A prime number
- 10 Forty-eight times a prime number
- 12 Eighty-six times a prime number
- 14 Ten thousand eight hundred sixty-eight more than Z5
- 15 Seven thousand nine hundred fifteen more than Z7
- 16 Four times a prime number
- 17 Fifty-two times a prime number
- 23 Y43 minus X13
- 24 Eighteen times a prime number
- 27 Y2 plus Y11
- 28 X58 minus Y11
- 32 X24 plus half of Z37
- 34 Z2 plus Z27
- 35 Y20 minus X27
- 37 Ten times Y40
- 38 X57 plus X8
- 39 Eight times a prime number
- 41 Same as Z2
- 42 Y53 plus Y48

**Solution:**

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

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