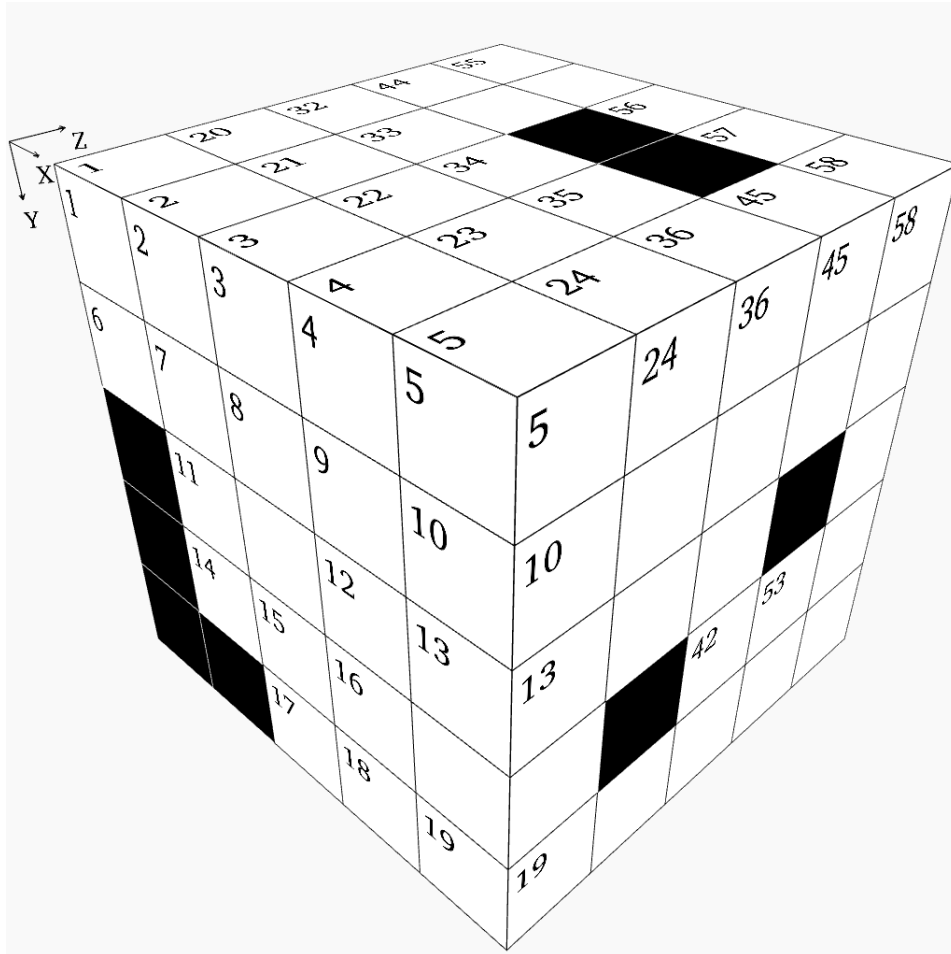


## Cube - Challenging Puzzle #12



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	20	21	22	23	24	32	33	34	35	36
6	7	8	9	10	25					37				
	11		12	13	26			27			38	39		
	14	15	16		28		29			40	41			42
		17	18	19	30	31					43			

44				45	55		56	57	58
			46	47			59		
	48		49		60	61		62	
50		51	52	53	63		64		
54					65				

### X Direction

- 1 Twice the result of X25 plus Y50
- 6 Twice a prime number
- 11 Y3 minus Y4
- 14 A square
- 17 X40 plus Y21
- 20 Six thousand twenty-eight less than X25
- 25 Eight thousand six hundred forty-four less than Y5
- 26 Mean of Z54 and Y1
- 27 Z41 divided by thirty-eight
- 29 Z18 divided by Z39
- 30 A prime number
- 32 Half of X20, then subtract Z7
- 37 Twenty-four times a prime number
- 38 A square
- 40 Z12 minus Z54
- 43 Eighty-five times a prime number
- 44 Z15 plus Y50
- 46 Thirty-five times Y56
- 48 Rearranged digits of Y60
- 50 Thirty-eight times a prime number
- 54 Y23 divided by Y1
- 55 Y58 reversed
- 59 Three times a prime number
- 60 A square
- 62 X14 divided by X60
- 63 First two digits are the same as Z49
- 65 Z11 minus Y64

### Y Direction

- 1 Y64 minus Y45
- 2 Eighty-nine times Y35
- 3 A prime number
- 4 Mean of Y57 and Z16
- 5 Twice a prime number
- 20 Mean of Z19 and X27
- 21 X54 minus Y32
- 22 Mean of Y53 and Z16
- 23 Two thousand five hundred thirty more than Y3
- 24 Three times Z51
- 29 A square
- 32 Z52 minus Z51
- 33 A prime number
- 34 Y32 squared
- 35 X44 minus Y45
- 36 A palindrome
- 45 X38 minus Y22
- 46 One thousand three hundred seventy-two less than Z28
- 47 X59 minus Z13
- 48 Seventy-four times X27
- 50 Y22 minus Y32
- 53 A square
- 56 Same as Y45
- 57 Sixty times a prime number
- 58 Mean of Z17 and X63
- 60 Forty-three times Y32
- 61 X62 plus X44
- 64 Y1 plus Y56

### Z Direction

- 1 Fifteen thousand six more than Y23
- 2 Twice the result of X55 plus X46
- 3 Rearranged digits of Z7
- 4 Z41 minus X26
- 5 Fifty-eight times a prime number
- 6 Three times a prime number
- 7 Z49 plus Z41
- 8 Five hundred thirty-two less than Y23
- 9 X1 minus X27
- 10 X40 plus half of X50
- 11 Three times a prime number
- 12 Y32 reversed
- 13 Twenty-nine times X27
- 15 Z51 minus Y56
- 16 Z52 minus Z49
- 17 Twice a prime number
- 18 Mean of X60 and X48
- 19 A prime number
- 28 Thirty-seven times a prime number
- 31 One thousand forty-seven more than X11
- 39 Y35 minus Z51
- 41 Y48 reversed
- 42 Thirty-one times X29
- 49 Mean of Z39 and Y32
- 51 Mean of Z16 and Y22
- 52 Mean of X62 and Z12
- 54 Mean of Y35 and X26

**Solution:**

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

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