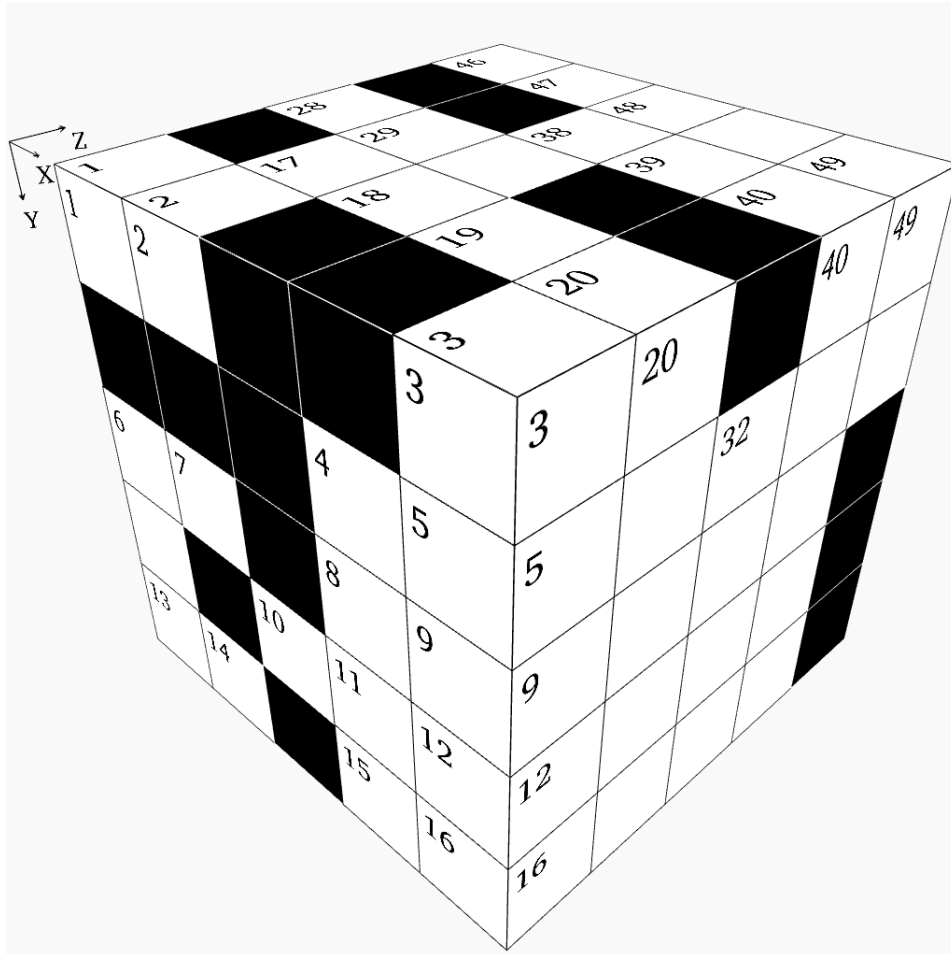


## Cube - Challenging Puzzle #42

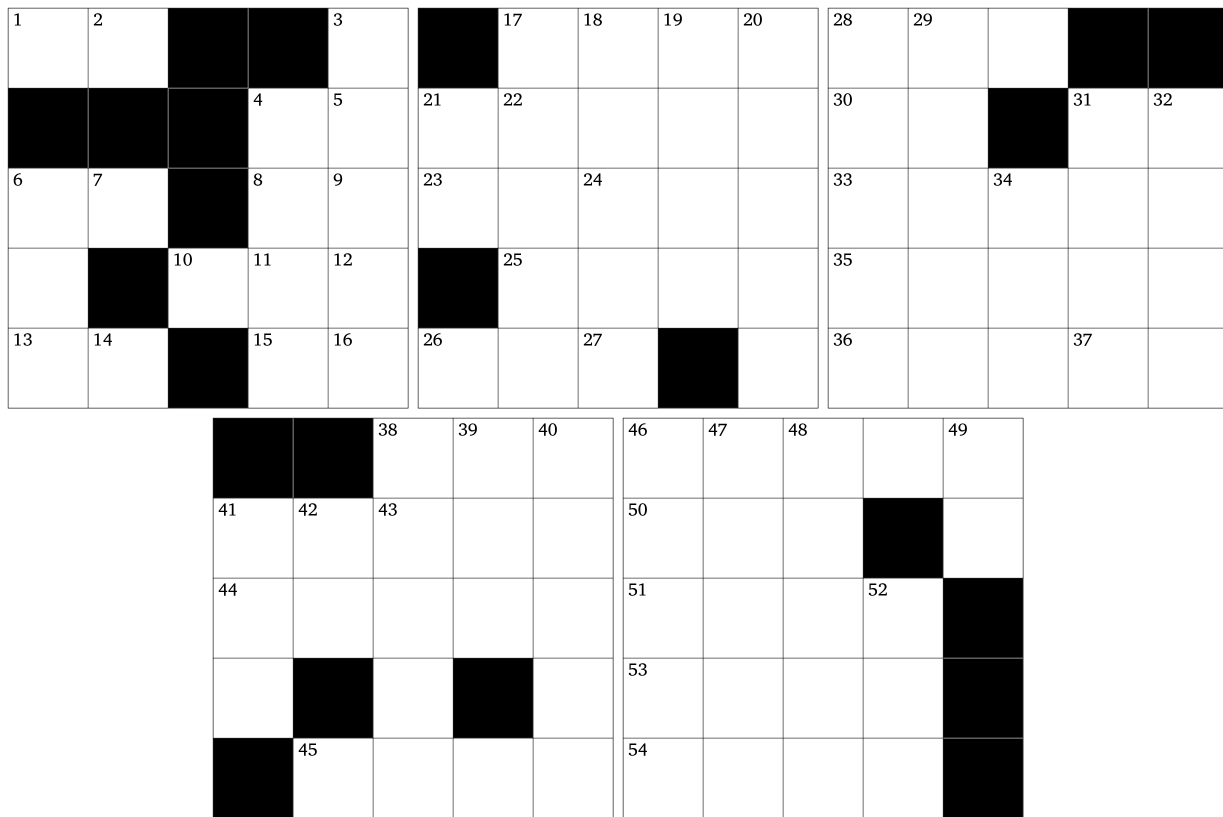


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

### 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:



**X Direction**

- 1 X41 divided by Z13
- 4 Z43 minus X15
- 6 X31 minus Z3
- 8 X13 plus Z25
- 10 Twice a prime number
- 13 Z40 minus Y49
- 15 X31 minus half of Z39
- 17 Fifty-six times X1
- 21 Twenty-six times a prime number
- 23 Eight hundred fourteen less than Y47
- 25 Last two digits are the same as last two digits of Z11
- 26 X50 plus Z3
- 28 Its digits total Z25
- 30 Five times Z25
- 31 Y42 plus Z43
- 33 Last two digits are the same as last two digits of X35
- 35 First two digits are the same as Z40
- 36 First three digits are the same as Y34
- 38 X50 plus Y41
- 41 Four thousand five hundred sixty-one more than Y3
- 44 Four thousand nine hundred thirty-two more than Z7
- 45 Eighty-nine times a prime number
- 46 A prime number
- 50 Ten times a prime number
- 51 Z5 divided by X6
- 53 Fifteen times a prime number
- 54 Five times a prime number

**Y Direction**

- 3 Eleven times a prime number
- 4 A cube
- 6 Mean of X50 and Y41
- 17 Five thousand nine hundred sixty-three more than Z6
- 18 Twice a square
- 19 Twice the result of Y47 minus X45
- 20 Sixty-five times a prime number
- 21 Z40 minus Z43
- 28 Rearranged digits of X33
- 29 Y32 plus Z9
- 31 Fifty-six times a prime number
- 32 Z43 plus Z22
- 34 Twice a prime number
- 38 Eighteen thousand seven hundred four more than Z5
- 39 Y31 minus Z18
- 40 A prime number
- 41 X15 plus Z2
- 42 A cube
- 46 Twenty-nine times a prime number
- 47 First two digits are the same as first two digits of Z4
- 48 Mean of X46 and X8
- 49 Y42 minus Z3
- 52 Five times a prime number

**Z Direction**

- 2 X4 plus half of Z35
- 3 Y6 divided by Z40
- 4 X6 times Z43
- 5 Ten thousand five hundred sixty-three more than Z14
- 6 X46 minus Z43
- 7 Y18 plus X10
- 8 Seventeen times a prime number
- 9 Twice a prime number
- 10 Z14 minus X8
- 11 Nine times Z40
- 12 Z18 minus Z2
- 13 Sixteen times X4
- 14 Eleven thousand seven hundred six more than Z7
- 16 A prime number
- 18 Fifty-nine times Z39
- 21 Mean of Z27 and Y52
- 22 A prime number
- 24 X54 plus Z12
- 25 Z39 divided by eight
- 27 Thirteen times a prime number
- 35 Seven times a square
- 37 Z13 plus X15
- 39 Eight times Y21
- 40 Mean of Y42 and X30
- 43 Z40 minus Z25

**Solution:**

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

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