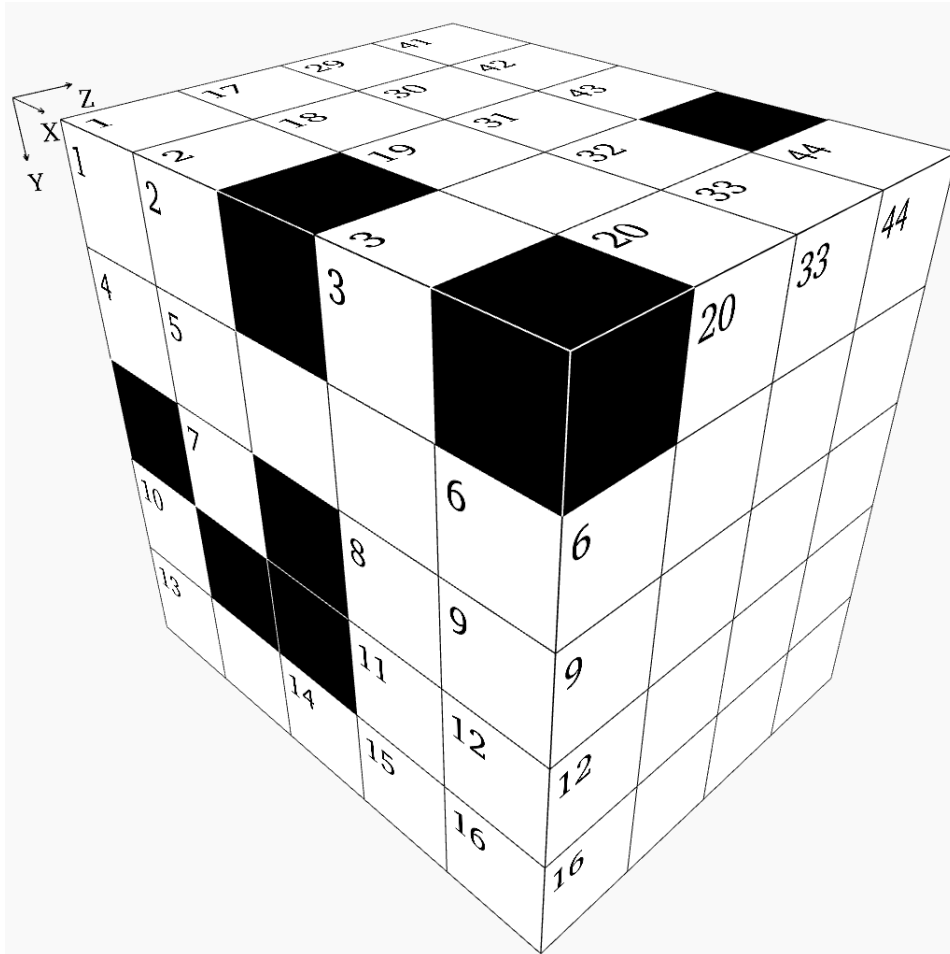


## Box - Hard Puzzle #23



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

### X Direction

- 1 Mean of Y49 and Y24
- 4 Sixty-eight times a prime number
- 8 Twice the result of X40 minus Z14
- 11 Mean of Y49 and Z40
- 13 Consecutive digits unordered
- 17 Twice the result of Y3 plus Z6
- 21 A square
- 22 A square
- 24 Eighty-five times a prime number
- 28  $X_{37} - X_{48}$
- 29 Twenty-nine times a prime number
- 34 Nine thousand six hundred five less than Y30
- 37 Sixteen times a prime number
- 39 Forty-five times a prime number
- 40 Three times a prime number
- 41 Mean of X48 and Z35
- 45 Twice the result of Y31 minus Z4
- 47 Rearranged digits of Z3
- 48 Three times a prime number
- 50 Twelve times a prime number

### Y Direction

- 1 Mean of X1 and X8
- 2 A prime number
- 3 First two digits are the same as first two digits of Y2
- 6 Three times a prime number
- 10  $X_{39} / Y_{18}$
- 17 Mean of X21 and Z40
- 18 Three times a prime number
- 20 Forty-seven times a prime number
- 23 Seventeen times Y42
- 24  $X_{22} - Y_{10}$
- 27 Mean of Z35 and Y10
- 29 Z40 minus Y27
- 30 Mean of Y41 and X50
- 31 Sixteen times a prime number
- 32 A prime number
- 33 A prime number
- 41 Four times a prime number
- 42 Z2 divided by Y2
- 43 Two thousand eight hundred ninety-three less than X17
- 44  $X_{13} + Z_3$
- 46  $Z_{23} - X_8$
- 49  $Z_{38} + Z_{13}$

### Z Direction

- 1 Z16 minus half of Z19
- 2 Eleven times a prime number
- 3 A square
- 4 Two hundred thirty-three more than Z5
- 5 Eleven times a prime number
- 6 Sixty-two times a prime number
- 7 Mean of Z3 and X11
- 9 A square
- 10 Fifteen times a prime number
- 11  $X_{28} - Y_{10}$
- 12 Nineteen times Y23
- 13  $Y_{43} - X_{24}$
- 14 A prime number
- 15 Nine times a prime number
- 16 Four times a prime number
- 19  $Y_{24} \times Y_{42}$
- 20 Twenty-nine times Y10
- 23  $Y_{46} + Z_{36}$
- 25 Thirteen times a prime number
- 26 Rearranged digits of Z3
- 35  $Z_{40} - Y_{10}$
- 36 Mean of Y49 and Y1
- 38  $Z_{13} - Y_{27}$
- 40 Mean of X1 and X21

