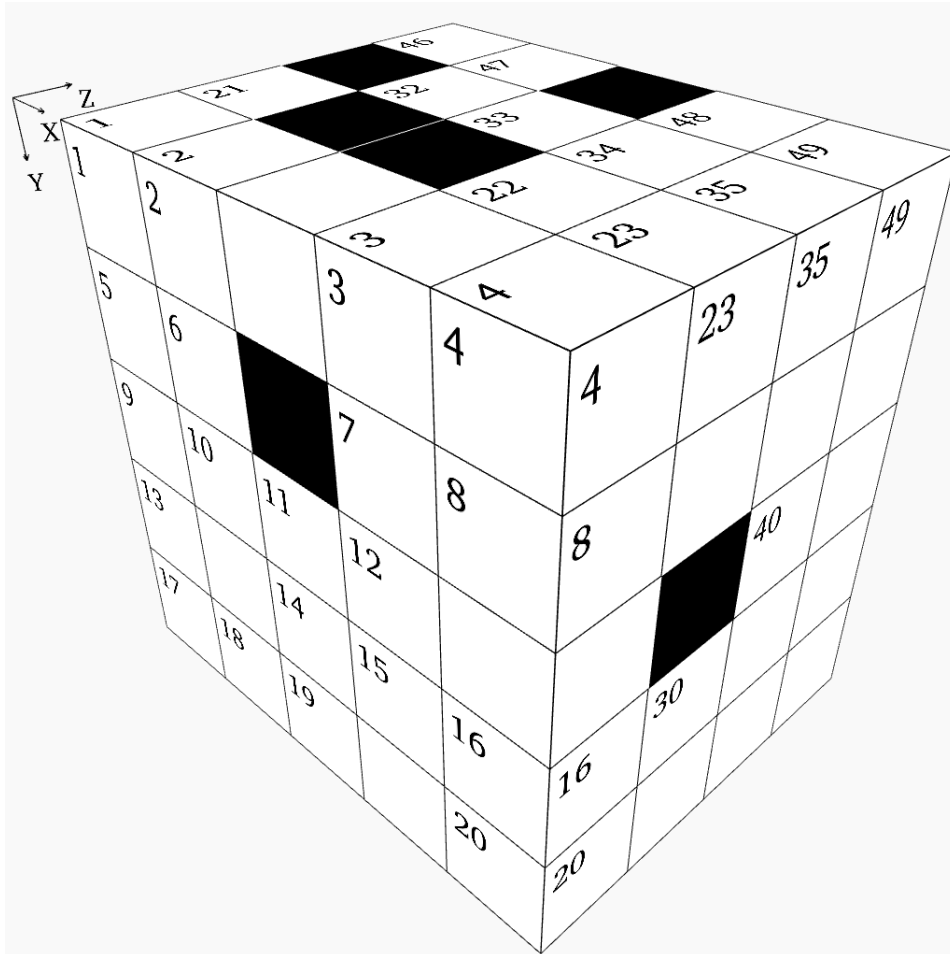


Box - Challenging Puzzle #58



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	4	21			22	23		32	33	34	35	
5	6		7	8	24	25		26		36		37			
9	10		11	12	27		28			38			39	40	
13			14	15	16			29		30	41	42	43		
17	18	19		20	31					44			45		
					46	47		48	49						
						50	51								
					52		53								
					54										
							55								

X Direction

- 1 Seventy-three times a prime number
- 5 Y34 divided by forty-four
- 7 A square
- 9 Eighteen times a prime number
- 13 Nine times a prime number
- 17 Six thousand six hundred eighty more than Y4
- 22 X48 plus Z1
- 24 Seven times X5
- 26 X48 plus Z11
- 27 Y30 times Z40
- 29 Twenty-six times X5
- 31 Ten times Z15
- 32 Y48 divided by Y33
- 36 Twelve times a prime number
- 38 Y23 minus X5
- 39 X46 minus X7
- 41 Z16 divided by Y47
- 44 Mean of Y21 and X38
- 46 Half of Y52, then subtract X31
- 48 Y43 minus Z40
- 50 Sixteen times a prime number
- 53 Nine times a prime number
- 54 Four thousand seven hundred nine less than X13
- 55 Nine times Y30

Y Direction

- 1 Eight thousand forty-three more than X44
- 2 Mean of Y28 and X54
- 3 A prime number
- 4 Thirty-nine times a prime number
- 11 Y34 minus X39
- 21 Three times a prime number
- 22 Y4 minus X13
- 23 Y11 minus Z10
- 25 Z40 plus Z32
- 28 X46 plus X38
- 30 Y47 plus Z37
- 32 Twenty-three times a prime number
- 33 X39 divided by three
- 34 A square
- 35 Twenty-one thousand two hundred thirty-eight more than Y21
- 36 X17 minus X36
- 43 X39 plus Z37
- 47 A square
- 48 Four thousand eleven less than Y4
- 49 Nineteen times a prime number
- 51 Mean of Z7 and Y23
- 52 X41 reversed

Z Direction

- 1 Mean of Z11 and Z37
- 3 Two hundred twenty-three less than Z19
- 4 Mean of Z7 and Z14
- 5 X24 plus Y43
- 6 Four times a prime number
- 7 Six times a prime number
- 8 Eight times a prime number
- 9 Forty-one times a prime number
- 10 A prime number
- 11 Y1 minus X1
- 12 Twice a prime number
- 13 All digits are the same
- 14 Thirty-two times a prime number
- 15 Z42 plus Y47
- 16 Sixteen times a prime number
- 17 X50 minus Z6
- 18 A prime number
- 19 Last two digits are the same as last two digits of Y51
- 20 Mean of Z12 and Y34
- 32 X7 minus Y33
- 37 Mean of X39 and Z40
- 40 Z11 plus Y47
- 42 Sum of digits in Y51
- 45 Y43 minus Y47

Solution:

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