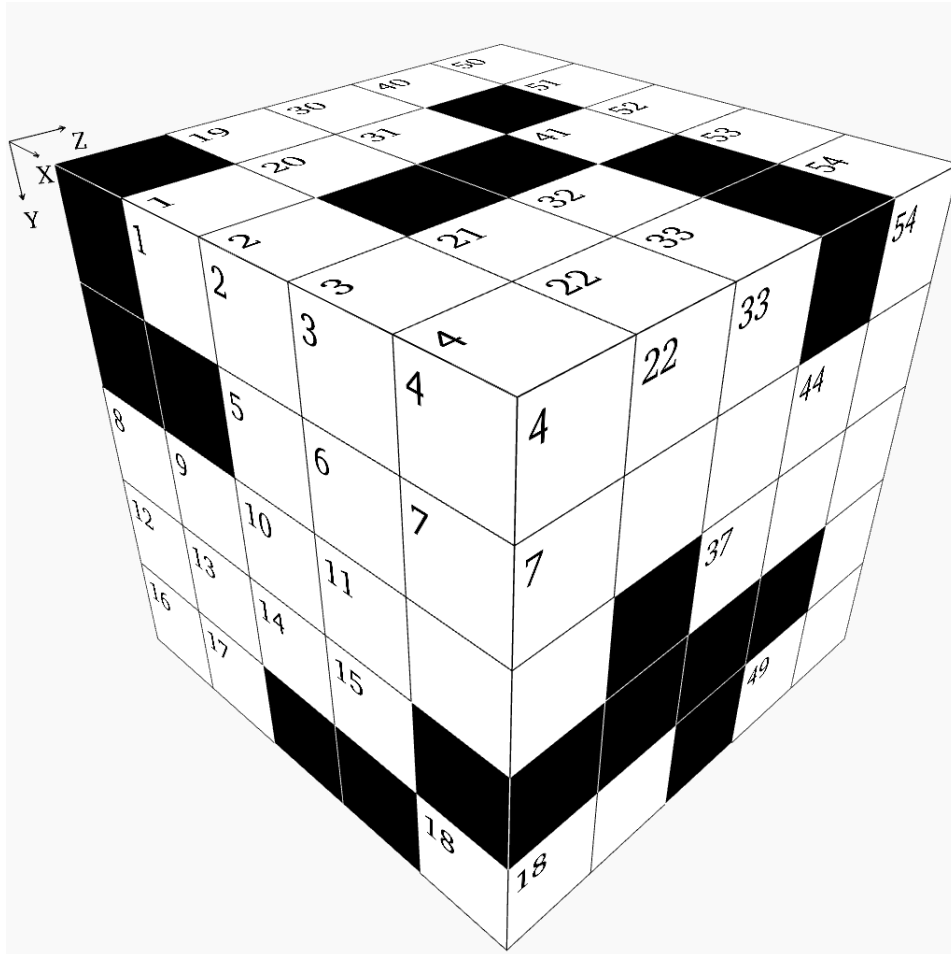


Cube - Hard Puzzle #21



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

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

X Direction

- 1 A prime number
- 5 Z8 divided by X29
- 8 Thirty times a prime number
- 12 Twice a prime number
- 16 Z4 minus half of X32
- 19 Sum of digits in X36
- 21 Same as Z48
- 23 Mean of Z9 and Y46
- 26 Eleven times a prime number
- 27 Mean of X1 and Z3
- 28 Z1 divided by X39
- 29 X28 plus Y46
- 30 A prime number
- 32 Z49 reversed
- 34 Y53 plus Y4
- 36 Nine times a prime number
- 38 Twice the result of Z5 minus Y3
- 39 Z3 divided by X19
- 42 X34 divided by twenty-four
- 45 X5 minus Z49
- 47 Z13 times X58
- 50 One thousand five hundred fifty-six more than X55
- 55 Y50 minus X29
- 56 First two digits are the same as first two digits of Z10
- 57 Mean of Z7 and X27
- 58 Y8 minus X19

Y Direction

- 2 X50 minus X1
- 3 Four times a prime number
- 4 X28 plus X5
- 8 X32 plus Z18
- 9 Three times a prime number
- 19 A palindrome
- 20 Fifty-one times a prime number
- 21 Nineteen times a prime number
- 22 Y35 minus Z10
- 25 Mean of Y33 and X58
- 30 A prime number
- 31 Three times a prime number
- 32 Forty-three times a square
- 33 Three times a prime number
- 35 Three times a prime number
- 40 X56 minus X26
- 41 Y22 reversed
- 43 X5 minus Z49
- 44 A square
- 46 Z18 minus X28
- 50 X55 plus Z18
- 51 Fourteen times a prime number
- 52 Four thousand eight hundred forty-six less than Y31
- 53 Eighty-two times a prime number
- 54 One thousand three hundred eighty-eight less than Y32

Z Direction

- 1 X28 times Z41
- 3 Z11 plus Y43
- 4 X21 plus X19
- 5 One thousand eight hundred forty-three less than Y53
- 6 Twice a prime number
- 7 Y54 minus Y8
- 8 X5 times Z18
- 9 A palindrome
- 10 Twice the result of Y8 minus Y41
- 11 Z3 minus X45
- 12 Four times a prime number
- 13 Fourteen times a prime number
- 14 X26 minus Y51
- 15 Five times a prime number
- 16 Thirty-one times a prime number
- 17 First two digits are the same as X21
- 18 Same as X29
- 19 Eleven times a prime number
- 23 Seventy-three times Y46
- 24 One thousand three hundred eighty-six more than X27
- 29 Its digits total Y44
- 37 Five times a prime number
- 41 Same as X30
- 48 Mean of Y22 and X5
- 49 Mean of Y43 and X32

Solution:

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

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