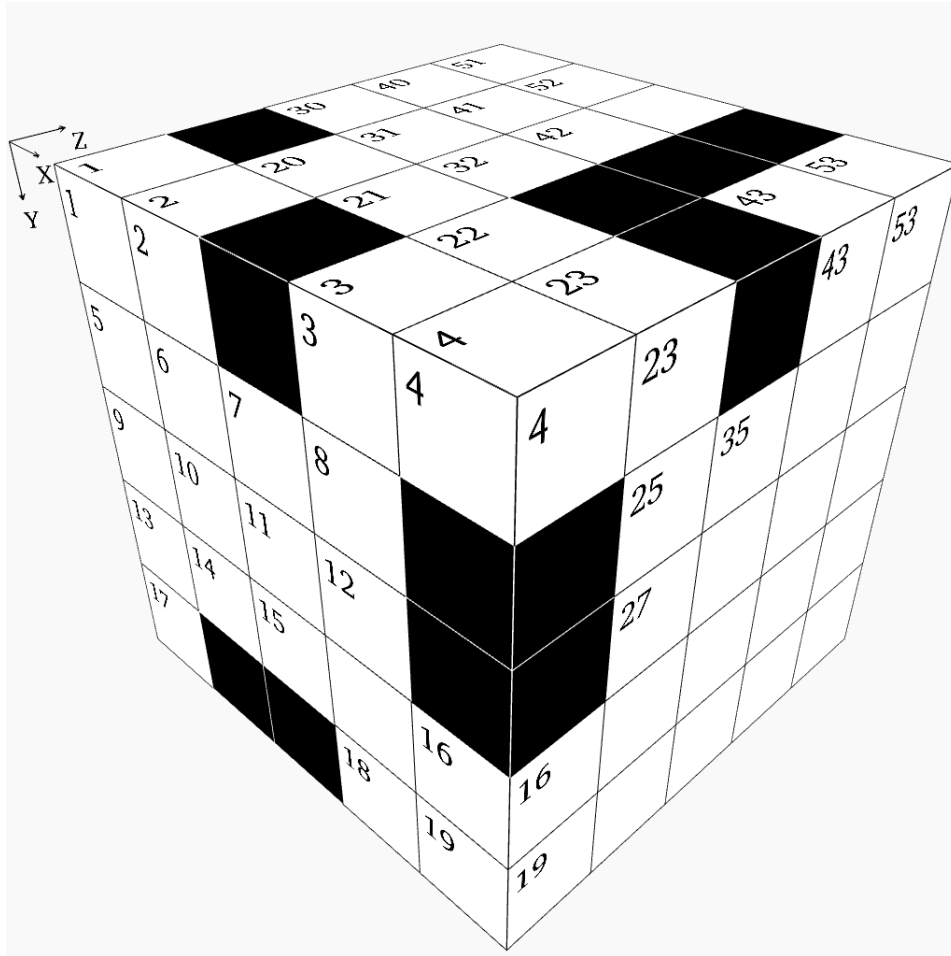


Cube - Hard Puzzle #31



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

40	41	42		43	51	52			53
44					54			55	
45				46				56	
		47			57	58			
48	49			50	59				

X Direction

- 1 A square
- 3 Mean of Y52 and X48
- 5 Three times a prime number
- 9 Z27 plus X56
- 13 First two digits are the same as first two digits of X30
- 18 X37 minus X54
- 20 X24 minus Y56
- 24 Ninety-two times X37
- 26 Twelve thousand fifty-one more than X57
- 28 Mean of Y24 and Z38
- 29 Mean of X37 and X50
- 30 Mean of Y40 and X48
- 33 Fourteen thousand five hundred forty-seven more than Y32
- 36 Eight thousand six hundred eighty-six less than Y3
- 37 Z38 minus Z3
- 39 A palindrome
- 40 Y22 plus X48
- 44 Eleven times X55
- 45 X39 minus Y56
- 46 X48 minus X45
- 47 Z11 minus X55
- 48 Mean of Z49 and Y52
- 50 Z4 plus X55
- 51 X50 plus half of Y41
- 54 Mean of X1 and Z43
- 55 Y46 minus X37
- 56 Three times a prime number
- 57 One thousand two hundred fifty less than Z18
- 59 X28 times Z43

Y Direction

- 1 X26 divided by seven
- 2 Twenty-three times a prime number
- 3 Twice the result of Z6 minus X29
- 7 Mean of Z38 and Y24
- 16 Z43 minus X45
- 20 Twenty-four times a prime number
- 21 Y46 times Y16
- 22 Y31 minus X50
- 23 A prime number
- 24 Z25 minus X39
- 30 Ninety-eight times a prime number
- 31 Z13 plus X37
- 32 Thirty-eight times a prime number
- 34 Ten times a prime number
- 35 Z4 plus Y7
- 40 A prime number
- 41 Four times a prime number
- 42 Half of X3
- 43 Seventeen times a prime number
- 46 Twice Z43
- 51 Mean of X57 and Y31
- 52 Y42 plus X45
- 53 Ninety-two times a prime number
- 55 Nine times X51
- 56 Twice a prime number
- 58 X3 plus X55

Z Direction

- 2 Two hundred seventy more than Z18
- 3 X18 minus X3
- 4 Y35 minus X28
- 5 Mean of Z17 and X40
- 6 Five times a prime number
- 7 X13 minus half of Y20
- 8 Four times a prime number
- 9 Mean of Z12 and Y34
- 10 Six times a prime number
- 11 Three times a prime number
- 12 Ten times a prime number
- 13 Twice the result of X37 minus X1
- 14 A square
- 15 Eight thousand six hundred twenty-five more than Y43
- 16 A prime number
- 17 Three times a prime number
- 18 Two thousand five hundred forty-nine less than X59
- 19 One thousand nine hundred twenty-one less than Z2
- 21 Twenty-three times a prime number
- 25 A cube
- 27 Z30 times X48
- 30 Mean of Z13 and Y16
- 38 Mean of Y52 and X40
- 43 X59 divided by Y7
- 49 X18 minus Y52

Solution:

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

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