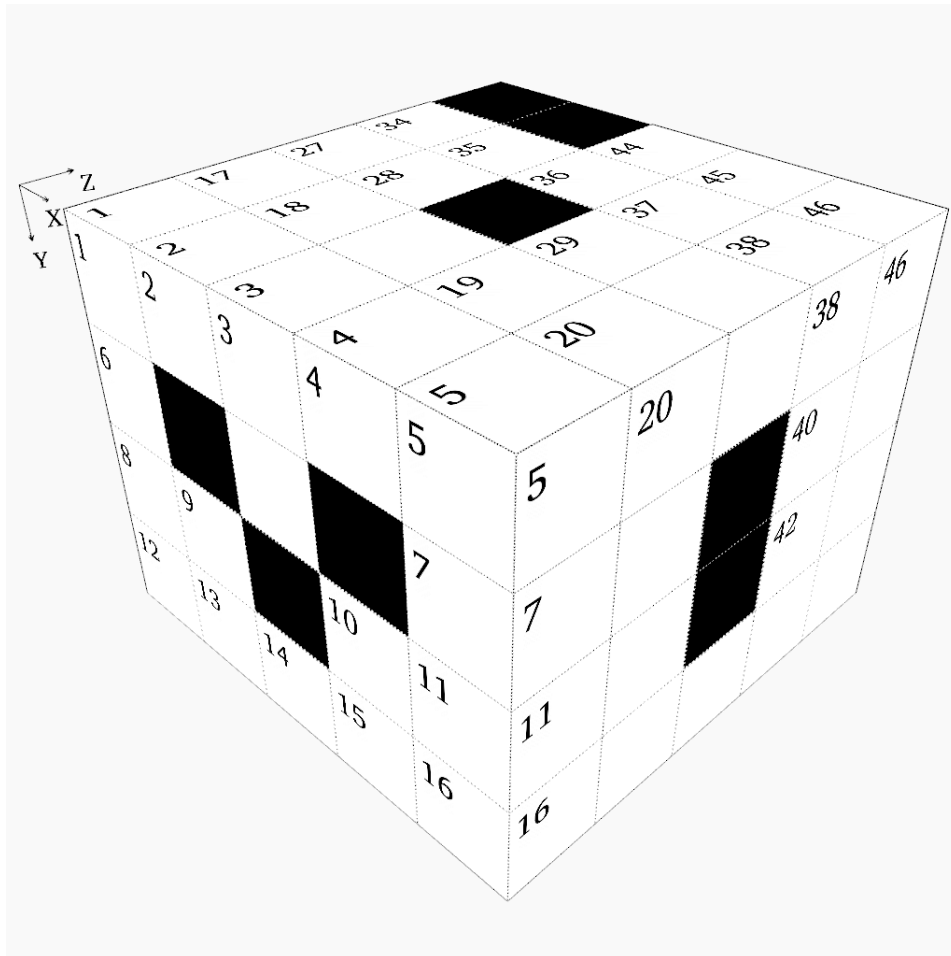


Difficulty: ★★★★★

Box - Hard Puzzle #8



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

34	35	36	37	38			44	45	46
39				40	47				
41				42				48	
	43				49				

X Direction

- 1 A prime number
- 8 Y10 plus Z3
- 10 X49 minus Y29
- 12 A prime number
- 17 Eleven thousand eight hundred sixty less than X39
- 21 Z12 minus Z25
- 23 Half of Y18, then subtract Z22
- 24 Last two digits are the same as last two digits of Z10
- 26 A prime number
- 27 Z4 divided by Y34
- 29 A prime number
- 30 Thirteen times a prime number
- 32 A prime number
- 33 Five thousand nine hundred fifty-five less than Z8
- 34 Twice a prime number
- 39 Fourteen times a prime number
- 41 A prime number
- 43 X48 minus X21
- 44 Last two digits are the same as Y10
- 47 Ninety-two times a prime number
- 48 Mean of X8 and Y44
- 49 A prime number

Y Direction

- 1 Z22 divided by four
- 3 A square
- 5 A prime number
- 9 Mean of Z11 and X43
- 10 Mean of X43 and Z3
- 17 Last two digits are the same as X48
- 18 Forty-two times a square
- 19 Rearranged digits of Y27
- 20 Three times a prime number
- 25 X29 minus X23
- 27 Forty-one times a prime number
- 28 Z6 minus Y46
- 29 X49 minus half of Y37
- 31 Y35 minus Y36
- 34 Fourteen times Z36
- 35 Two thousand two hundred seventy-five less than Y18
- 36 Twenty-three times a prime number
- 37 Mean of X29 and X48
- 38 Z16 minus X30
- 44 Consecutive digits in descending order
- 45 Mean of Y19 and Y20
- 46 A prime number
- 47 Twenty-three more than Z31

Z Direction

- 1 A prime number
- 2 A palindrome
- 3 X10 minus X23
- 4 First two digits are the same as first two digits of Y27
- 5 Seven times a prime number
- 6 X24 minus X33
- 7 X29 minus X21
- 8 Mean of X24 and X26
- 9 Nine times a prime number
- 10 X44 minus half of Z31
- 11 Same as Z36
- 12 A prime number
- 13 Y5 plus half of Y1
- 14 First two digits are the same as X21
- 15 Twenty-seven times X23
- 16 A prime number
- 22 Sixty-two times X8
- 23 Four hundred sixty-nine less than Y20
- 25 Three times a prime number
- 31 Thirty-two times a prime number
- 36 Mean of X10 and Y37
- 40 Y25 divided by three
- 42 X43 plus X21

Solution:

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

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