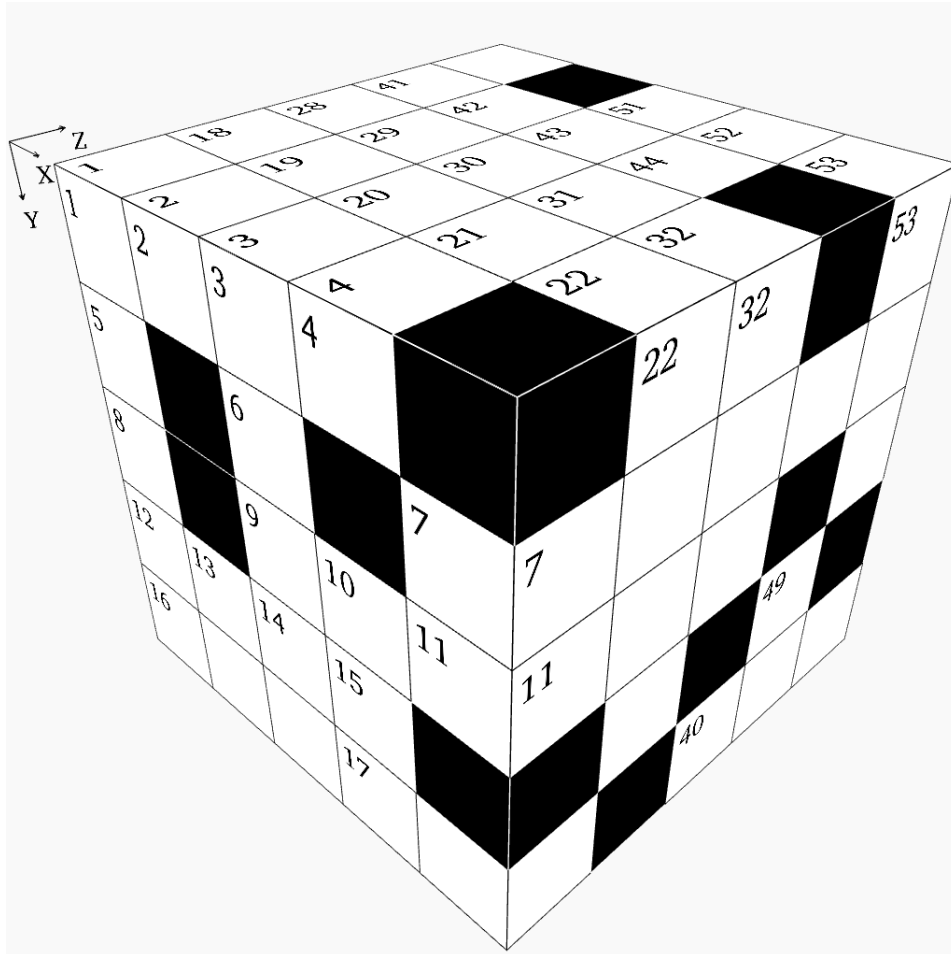


## Cube - Hard Puzzle #13



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		18	19	20	21	22	28	29	30	31	32
5		6		7	23	24		25			33			
8		9	10	11			26			34	35			
12	13	14	15				27				36			
16			17							37	38	39		40

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

### X Direction

- 1 Forty-two times a prime number
- 9 A prime number
- 12 Half of Z2, then subtract Z38
- 16 Twelve thousand six hundred eighty-two less than Z1
- 18 Thirteen times a prime number
- 23 Seven thousand seven hundred sixty-eight more than Z4
- 26 Mean of X47 and Z22
- 27 X50 minus Z9
- 28 A prime number
- 33 Twice a square
- 34 A prime number
- 37 Its digits total Z48
- 41 Thirty-two times a prime number
- 45 Forty-six times a prime number
- 46 First two digits are the same as first two digits of Z40
- 47 Half of Z1, then subtract Y31
- 50 First two digits are the same as first two digits of X26
- 51 Mean of Y49 and Y20
- 54 A prime number
- 55 Four times a prime number
- 57 Thirty-four times a prime number
- 58 Mean of X41 and Y44

### Y Direction

- 1 Eight thousand one hundred two less than Y29
- 3 Four thousand one hundred thirteen more than Y31
- 7 Y46 minus Z5
- 10 Y52 minus half of X16
- 13 Y55 plus Z48
- 18 X34 plus half of Z35
- 19 Y7 plus Z47
- 20 X51 plus half of Z15
- 21 Y55 plus half of Z6
- 22 Twice a prime number
- 29 Twenty-two thousand two hundred fourteen less than X23
- 30 Consecutive digits in descending order
- 31 Y51 reversed
- 32 Z35 minus Y13
- 42 Twenty-one thousand eight hundred fifty-nine less than X34
- 43 Eight thousand eight hundred twenty-two less than Y1
- 44 Four times a prime number
- 46 A square
- 49 Sum of digits in X1
- 51 Y31 reversed
- 52 Five thousand three hundred one less than Y31
- 53 Mean of X9 and Y19
- 55 Y56 divided by fourteen
- 56 Two-thirds of Z24

### Z Direction

- 1 Thirty-six times a prime number
- 2 Twice a prime number
- 3 Forty-five times a prime number
- 4 Three thousand eight hundred twenty-nine less than X18
- 5 Z40 minus Z14
- 6 Last three digits are the same as last three digits of X46
- 7 X46 plus half of Y1
- 8 Three thousand four hundred sixty-eight less than Z4
- 9 First two digits are the same as first two digits of Y53
- 10 A prime number
- 11 Twenty-three times Z22
- 12 Y13 minus Y7
- 14 Z47 plus Z12
- 15 Mean of X27 and Y22
- 16 Eleven times a prime number
- 17 Sixteen times a prime number
- 22 Z40 minus X26
- 24 Twenty-one times Y55
- 25 Twenty-one times a prime number
- 35 Last two digits are the same as last two digits of X45
- 36 Eight times a prime number
- 38 Y49 times Z47
- 39 Z24 minus Z36
- 40 Twice a prime number
- 47 Mean of Z48 and Y7
- 48 A prime number

**Solution:**

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

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