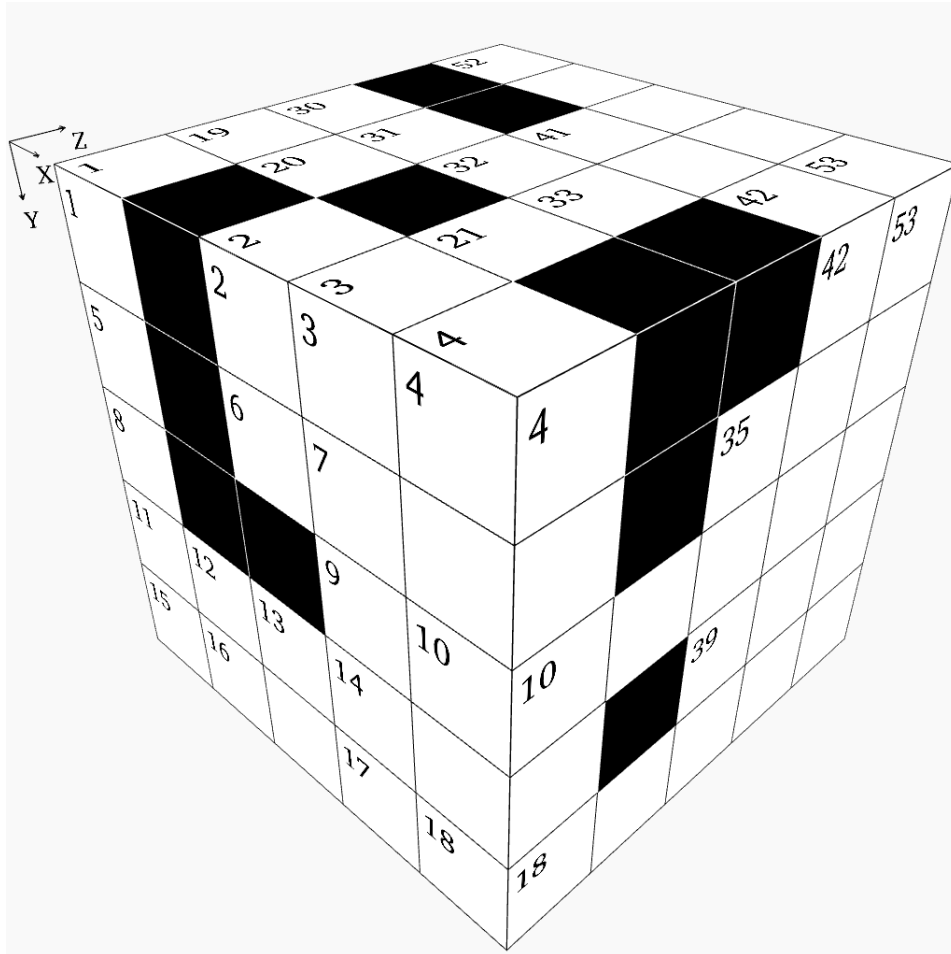


## Cube - Hard Puzzle #30



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

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

### X Direction

- 2 Twice the result of X43 plus X28
- 6 Y56 plus Z11
- 9 Y12 minus Y13
- 11 Thirteen times a prime number
- 15 Five times a prime number
- 19 Z20 plus Z45
- 22 Fourteen times a square
- 24 Z1 minus Z35
- 26 X50 minus X29
- 27 Z6 plus Y55
- 28 Z17 minus Z20
- 29 Mean of Z42 and X28
- 30 Fifty-one times a prime number
- 34 Six thousand four hundred forty-one less than Y4
- 36 Twenty-six times X41
- 38 X40 minus Y55
- 40 X26 times X29
- 41 Mean of X26 and Z23
- 43 Z51 times Z11
- 45 Two thousand five hundred twenty-six less than Z5
- 47 Mean of X19 and Y12
- 49 Twice the result of Y3 minus Z3
- 50 Z37 divided by Z42
- 51 Mean of Z20 and Z51
- 52 Eleven thousand fourteen less than X15
- 54 Four thousand one hundred sixty-eight less than Z18
- 58 Sixty-three times a prime number
- 59 Z37 minus Z32

### Y Direction

- 1 Z18 minus Z11
- 2 Mean of Z42 and Z23
- 3 X9 plus Z3
- 4 Last two digits are the same as last two digits of Z9
- 12 X41 minus X28
- 13 Z47 minus X51
- 19 Two thousand six hundred sixty-six more than X54
- 20 Five times a prime number
- 21 Thirty-three times a prime number
- 30 Y12 plus Z47
- 31 Z42 plus X38
- 32 Mean of Y4 and X54
- 33 Mean of Z25 and Y46
- 35 Its digits total Y13
- 41 Mean of Z17 and Z23
- 42 Twice a prime number
- 43 Twenty-two times a prime number
- 44 Twenty-eight times a prime number
- 46 X50 plus X41
- 52 X52 minus Y30
- 53 A prime number
- 55 Four times Z45
- 56 X22 minus Y31
- 57 A square

### Z Direction

- 1 X2 minus Z32
- 3 Three thousand twenty-four more than Y21
- 5 Five times a prime number
- 6 X27 minus Z48
- 7 Nine times Z17
- 8 A square
- 9 Eighty-five times a prime number
- 10 A prime number
- 11 Z12 minus X51
- 12 Mean of Z51 and X19
- 13 X43 minus X6
- 14 Y20 plus Y42
- 15 First three digits are the same as Z1
- 16 Last two digits are the same as X19
- 17 Z32 divided by five
- 18 Thirty-three times a prime number
- 20 Mean of Z11 and Z12
- 23 Z13 plus Y13
- 25 Thirty-seven times a prime number
- 32 Z35 minus Z47
- 35 Mean of X19 and Y31
- 37 X49 times Z42
- 39 A square
- 42 Z35 divided by forty-two
- 45 Twice the result of Z18 minus Y1
- 47 X49 minus Y13
- 48 Z13 minus X49
- 51 Twice the result of X41 minus Z17

**Solution:**

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

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