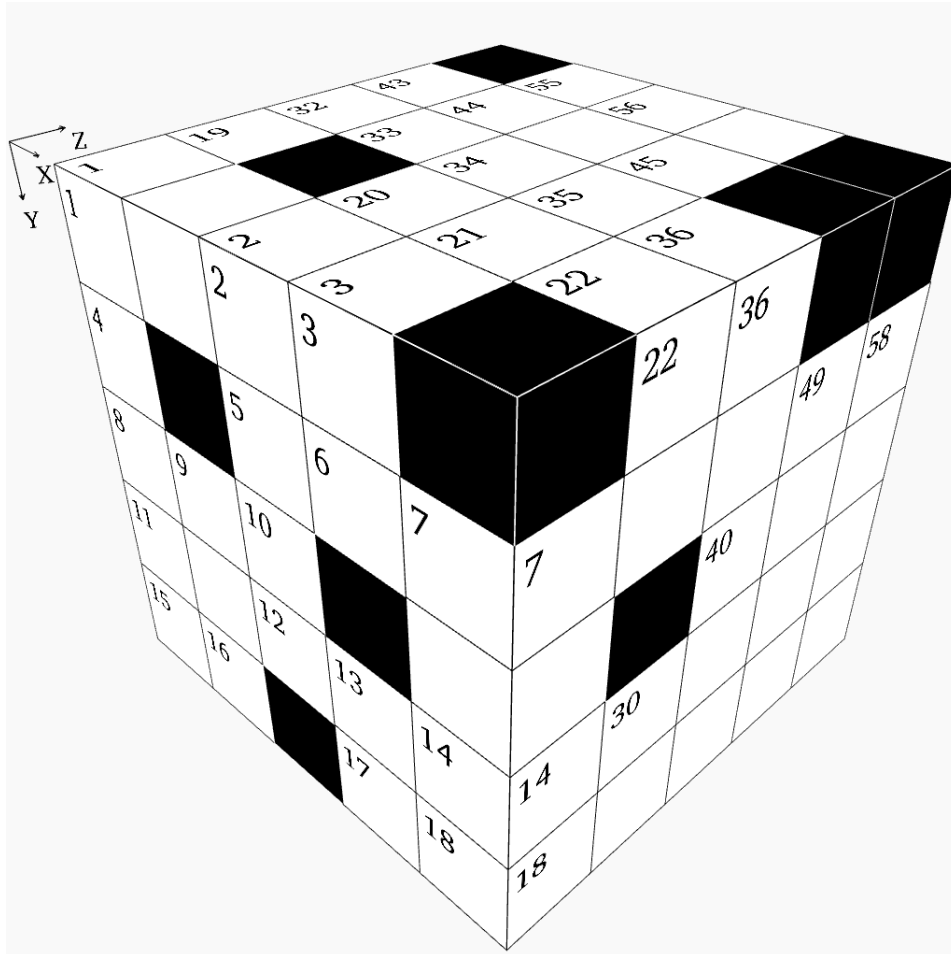


## Cube - Challenging Puzzle #13



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		19		20	21	22	32	33	34	35	36
4		5	6	7	23	24		25				37		
8	9	10			26		27	28		38	39			40
11		12	13	14			29		30	41				
15	16		17	18	31					42				

43	44		45		55	56		
46	47		48	49	57			58
50		51				59	60	
		52				61		
53		54			62			

### X Direction

- 1 Twenty-two times a prime number
- 5  $X_{20}$  minus  $X_{31}$
- 8 Forty-one times  $X_{25}$
- 11  $Y_{44}$  plus half of  $Z_{13}$
- 15  $X_{37}$  minus  $Z_{47}$
- 17  $X_{41}$  minus  $Y_{56}$
- 20  $Y_{35}$  minus  $Z_{22}$
- 23  $Z_{47}$  plus  $Y_3$
- 25  $X_{55}$  minus  $Z_{40}$
- 26 Seventy-six times  $Z_{22}$
- 29 Sixty-seven times  $Y_{55}$
- 31 Forty-eight times  $X_{17}$
- 32 A prime number
- 37  $X_{15}$  plus half of  $Y_{57}$
- 38 Three thousand four hundred thirty-seven less than  $Z_8$
- 41 A prime number
- 42  $Y_3$  minus  $Y_{60}$
- 43 Mean of  $Y_3$  and  $X_{26}$
- 46 Half of  $X_1$ , then subtract  $Z_{11}$
- 48  $X_{46}$  plus  $X_{25}$
- 50 Mean of  $Y_{36}$  and  $Z_{10}$
- 52  $Y_{58}$  minus half of  $Z_6$
- 53 A prime number
- 55  $X_{42}$  plus  $X_{37}$
- 57 Twenty times  $Y_{60}$
- 59 A prime number
- 61 Consecutive digits unordered
- 62 Mean of  $Z_{22}$  and  $X_{59}$

### Y Direction

- 1 A prime number
- 2 Three times a prime number
- 3 A square
- 7 A prime number
- 9  $Y_{49}$  minus  $Z_{28}$
- 13  $Y_{35}$  minus  $Y_9$
- 19 Four hundred seventy-eight less than  $Z_{12}$
- 21 Three times a prime number
- 22  $Y_{24}$  minus  $Y_{60}$
- 24 Seven times  $X_{25}$
- 27 Twice the result of  $X_{62}$  minus  $Y_{61}$
- 30 Twice the result of  $X_{55}$  minus  $X_{23}$
- 32  $Y_{19}$  minus  $Y_{22}$
- 34 Six hundred twenty-eight more than  $Y_7$
- 35 Ninety-four times  $X_{17}$
- 36 Thirty-five times a prime number
- 39  $Y_{57}$  plus  $Z_{47}$
- 43  $X_{53}$  times  $Y_{39}$
- 44 Eight times a prime number
- 45 A prime number
- 49 Sixteen times a prime number
- 51 A prime number
- 55 Twice the result of  $X_{31}$  minus  $Z_{33}$
- 56 Sixty-two times a prime number
- 57 Mean of  $Y_{13}$  and  $X_{48}$
- 58 Eighty-six times  $X_{42}$
- 60  $X_{43}$  minus half of  $X_{26}$
- 61 A square

### Z Direction

- 1 One thousand five hundred sixty-three more than  $Y_2$
- 2 Rearranged digits of  $X_{11}$
- 3 Eighty-one times a prime number
- 4 Twelve times a prime number
- 6 Twice a prime number
- 7 Sixteen times a prime number
- 8 Four times a prime number
- 9 Fifty-two times a prime number
- 10 A prime number
- 11 Ten times a prime number
- 12 Five hundred thirty more than  $Y_{32}$
- 13 Seventy-six times a prime number
- 14 Twenty-one thousand eight hundred forty-six more than  $Z_3$
- 15 Twelve times a prime number
- 16 Three times a prime number
- 18 Twenty-two times a prime number
- 22  $X_{52}$  minus  $X_{57}$
- 28 Seven times a prime number
- 33 Rearranged digits of  $X_{53}$
- 40  $X_5$  minus half of  $X_{57}$
- 47  $Y_{22}$  minus  $Z_{54}$
- 54  $Y_{39}$  minus  $Y_{24}$

**Solution:**

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

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