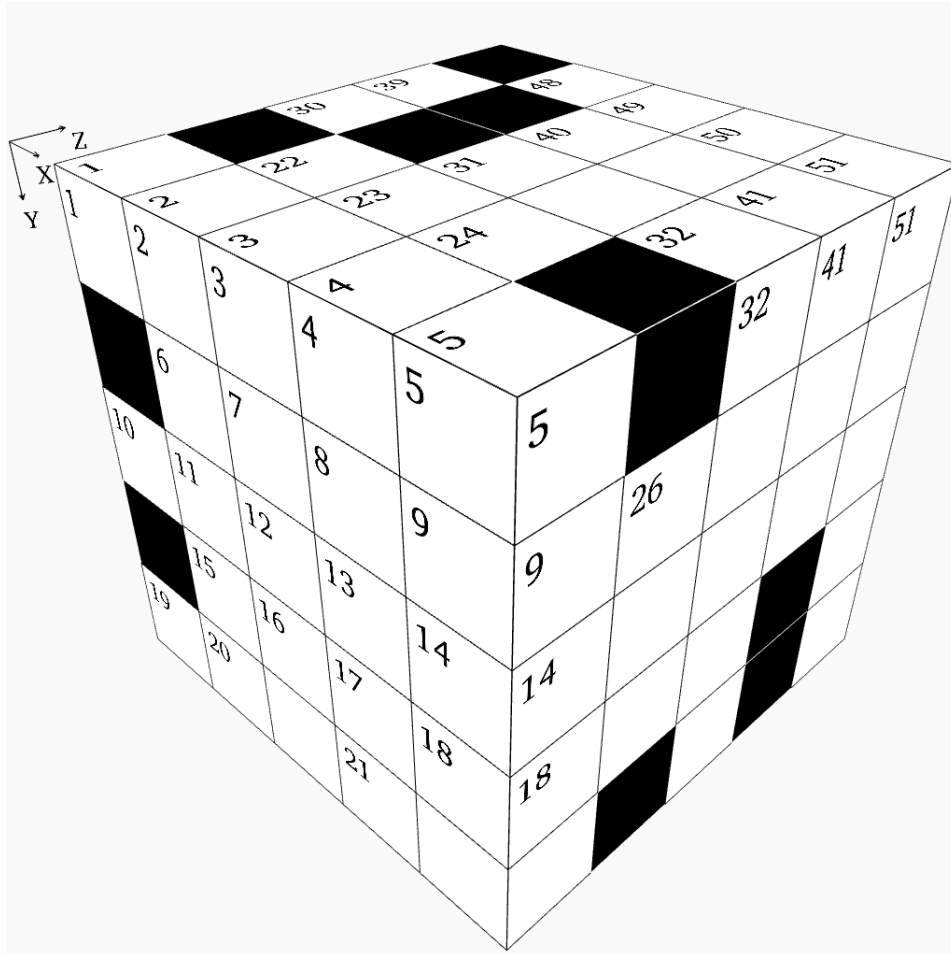


## Cube - Challenging Puzzle #20



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	5	22	23	24	30	31	32
6	7	8	9	25	26	33	34	35	36	
10	11	12	13	14	27					
15	16	17	18	28					37	
19	20		21	29				38		
39	40	41	48	49	50	51				
42	43			52						
44		45		53						
46	47			54						
				55						

### X Direction

- 1 Three times a prime number
- 6 X48 plus Y27
- 10 Twelve thousand twelve less than Y3
- 15 Five times a prime number
- 19 Mean of Z6 and Y23
- 22 X19 divided by forty-two
- 25 Twice a prime number
- 27 First two digits are the same as first two digits of Y50
- 28 A prime number
- 29 Y34 minus X37
- 31 Mean of Z33 and Z2
- 33 A prime number
- 35 Nineteen times a prime number
- 37 Z8 minus Z30
- 38 Twenty times a prime number
- 40 Mean of Y43 and X22
- 42 Mean of X46 and Z15
- 44 Seven thousand two hundred eighty-four more than Y3
- 46 All digits are the same
- 48 X25 plus Z33
- 52 Twice a prime number
- 53 Half of Z3, then subtract Z11
- 54 Forty-five times Z18
- 55 Twice the result of Z19 minus X1

### Y Direction

- 2 Seventeen times a prime number
- 3 Four times a prime number
- 4 Mean of Y51 and X31
- 5 Mean of Y22 and X52
- 22 Thirteen thousand fifty more than X38
- 23 Fourteen times Y27
- 24 X35 plus X6
- 26 A prime number
- 27 Z20 minus X33
- 30 A prime number
- 32 Twice the result of Z12 plus Y43
- 34 Mean of X42 and Z47
- 36 Twice a prime number
- 39 Six thousand five hundred twenty more than Z3
- 41 Thirty times Z15
- 43 A prime number
- 45 Mean of Z32 and Y36
- 48 Seven thousand six hundred fifty-seven less than Y39
- 49 Six times a prime number
- 50 A prime number
- 51 A prime number
- 52 Four times a prime number

### Z Direction

- 2 Mean of X46 and X33
- 3 One thousand nine hundred three more than Z17
- 4 X54 minus Y52
- 6 Sixty-two more than Y39
- 7 X37 plus Z15
- 8 Four-fifths of X29
- 9 Six thousand nine hundred fifty-nine more than X27
- 10 Twenty-nine times a prime number
- 11 Two thousand three hundred ninety-four more than Z4
- 12 A prime number
- 13 Sixteen times a prime number
- 14 Twice the result of X28 minus Y2
- 15 X42 divided by five
- 16 Y34 minus X37
- 17 Fifty-one times a prime number
- 18 Y45 plus Z7
- 19 Consecutive digits unordered
- 20 Z15 plus Y26
- 21 A prime number
- 28 Z10 minus half of Z9
- 30 Sum of digits in X15
- 32 One hundred sixty-five less than X22
- 33 Twelve times a prime number
- 47 Z7 plus Z2

**Solution:**

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

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