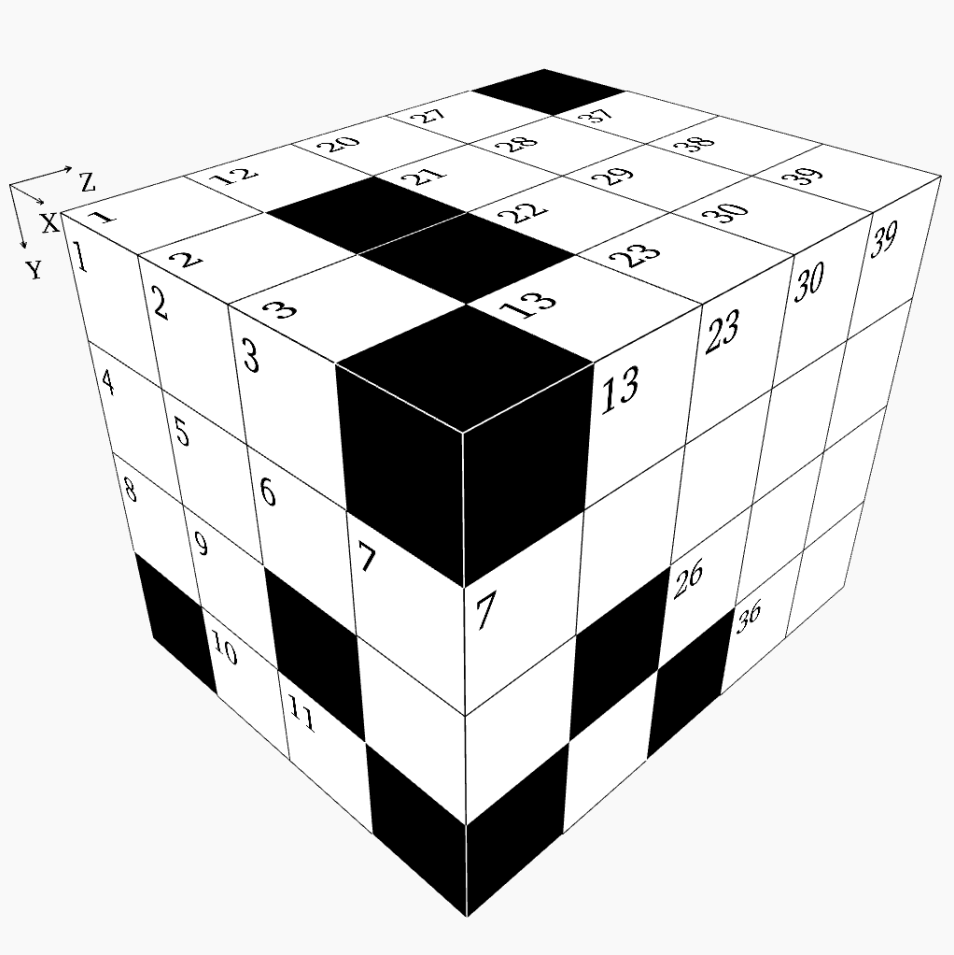
Difficulty: ★★☆☆☆

Box - Challenging Puzzle #37

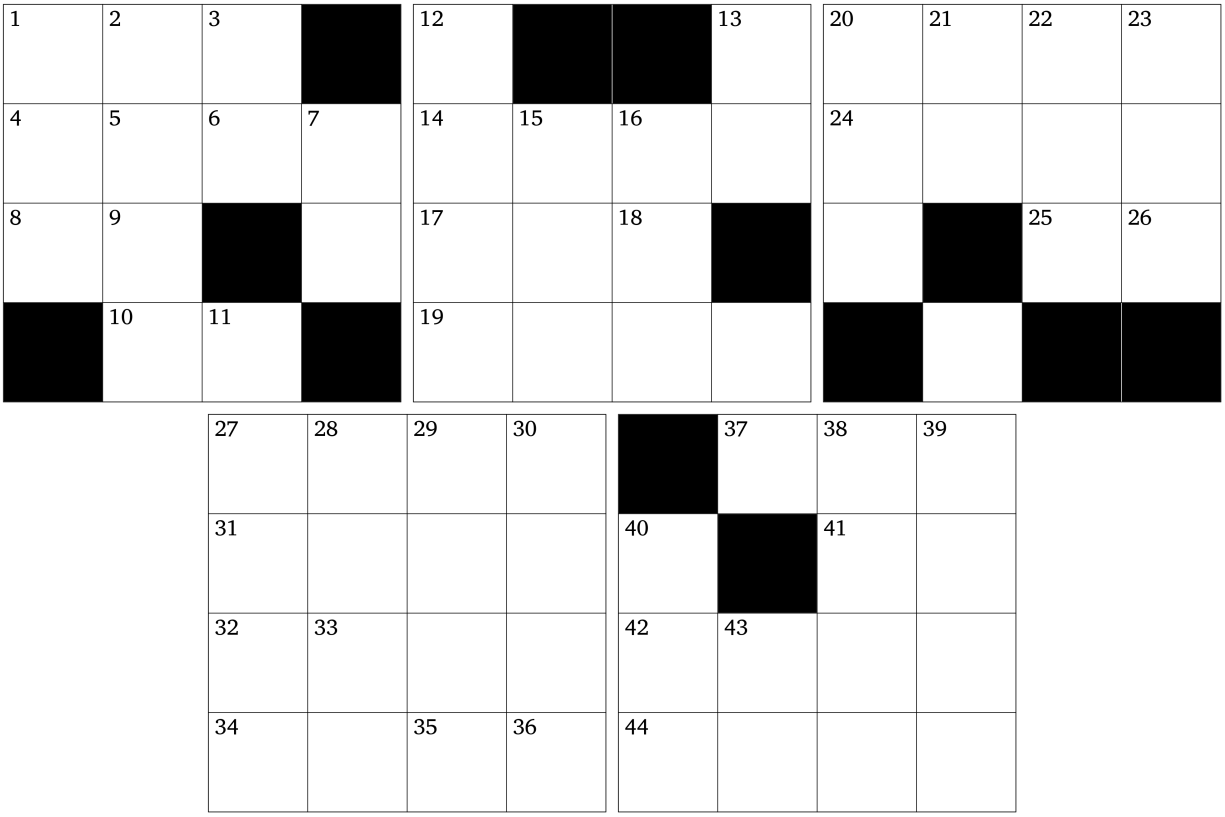


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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:



X Direction

1 X4 minus Y27
4 Nine hundred forty-five more than Y2
8 Z34 plus Z9
10 Y15 divided by Y7
14 Rearranged digits of X27
17 Z21 plus Z22
19 A prime number
20 Rearranged digits of Y28
24 Twenty-eight times X41
25 Mean of Z34 and Y3
27 Five hundred eighty-six less than X4
31 Twice a prime number
32 Twenty-three times a prime number
34 Z9 times Z33
37 Fifteen times a square
41 Mean of Y40 and Y21
42 Twenty times a prime number
44 Rearranged digits of Z1

Y Direction

1 Twice the result of Y40 plus X8
2 Twice the result of Z1 plus X17
3 Z11 plus Y13
7 Z11 divided by five
12 Nine times a prime number
13 Y23 divided by seven
15 Y1 plus Y16
16 Four times X37
20 Consecutive digits unordered
21 Mean of Z33 and X10
22 Z35 plus half of Y16
23 Three times a square
27 One hundred ninety-seven more than X27
28 Twenty-six times a prime number
29 Mean of Y39 and Y13
30 Mean of X44 and Z5
38 Five times a prime number
39 A prime number
40 Mean of X37 and Y3
43 Y23 minus Y21

Z Direction

1 Z33 times Y3
4 Last two digits are the same as last two digits of X20
5 Fifteen times a square
6 Forty-four times a prime number
7 Three times a prime number
8 A prime number
9 Three times Y13
10 A square
11 Mean of X41 and X25
13 Five times a prime number
18 Mean of Y38 and Y12
21 Y1 plus Y40
22 Mean of Z21 and X37
26 X24 minus Y28
33 Mean of X25 and Y13
34 A prime number
35 Y43 minus Z33
36 Mean of X10 and Y3

Solution: