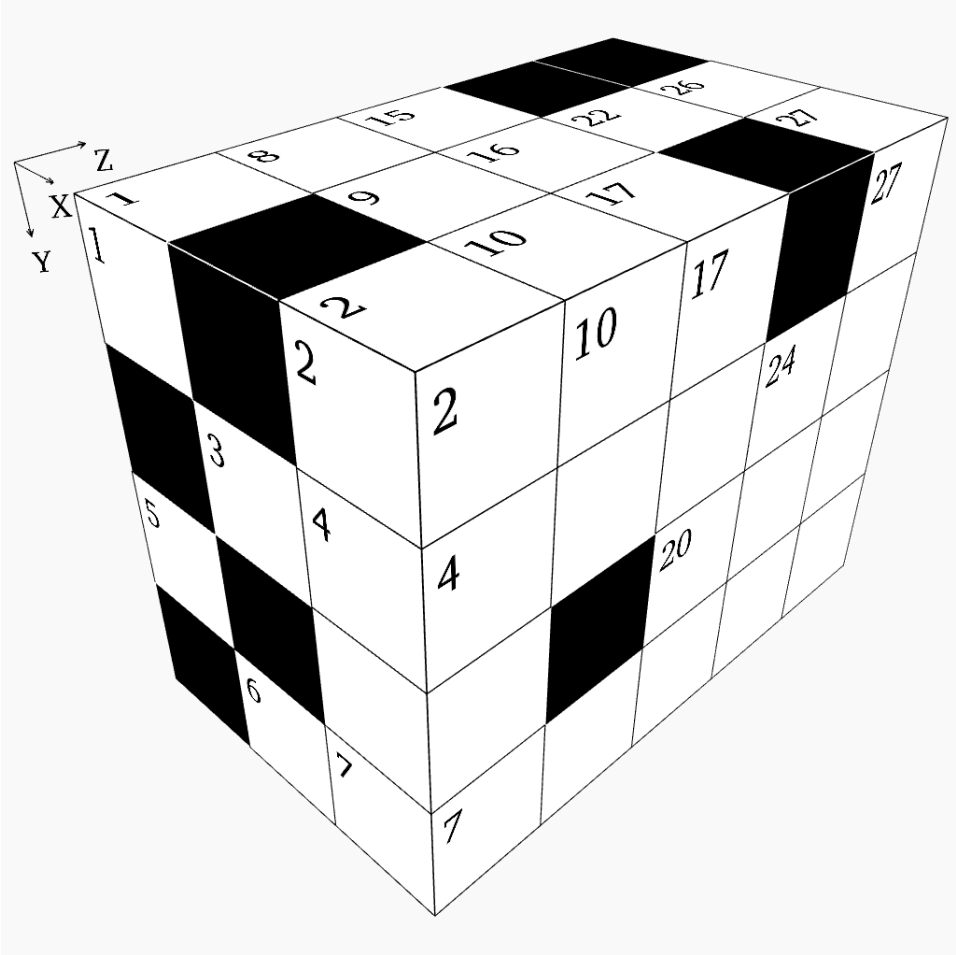
Difficulty: ★★☆☆☆

Box - Challenging Puzzle #16

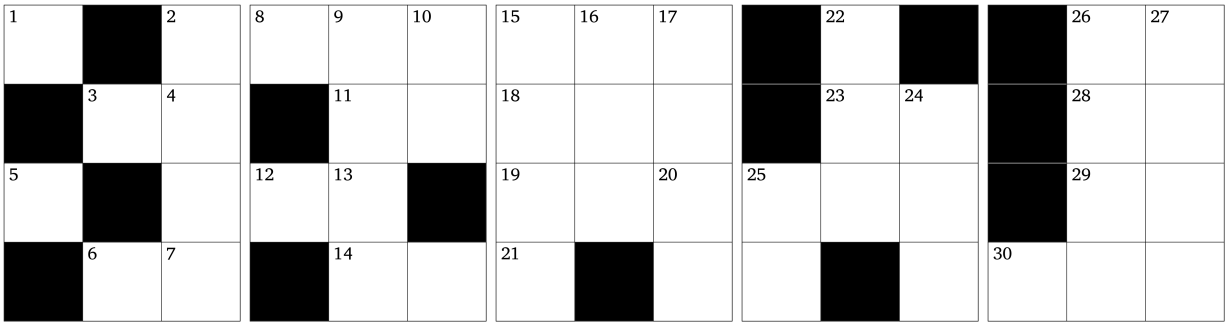


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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

3 Y2 divided by X12
6 Same as X29
8 Twice a prime number
11 Z6 minus Y10
12 Three times a prime number
14 Same as X11
15 X18 minus Z6
18 Nine times a prime number
19 A cube
23 Y25 plus X26
25 A square
26 Half of X28
28 Z5 divided by forty-eight
29 Seven times a prime number
30 Z4 divided by twenty-two

Y Direction

2 Fifty-one times a prime number
9 Four times a prime number
10 Mean of X28 and X23
15 Y16 plus half of X8
16 Rearranged digits of X15
17 Eight times a prime number
22 Mean of X26 and X18
24 Twenty-nine times a prime number
25 Consecutive digits in descending order
26 A prime number
27 Twice the result of Y26 minus X29

Z Direction

1 Mean of Z20 and X12
2 A prime number
3 Z2 times Z1
4 Z7 plus Z6
5 Mean of Z9 and Z20
6 Y22 minus Y10
9 Nine times a prime number
13 Twenty-nine times a prime number
20 Three times a prime number
21 Z13 minus X30

Solution: