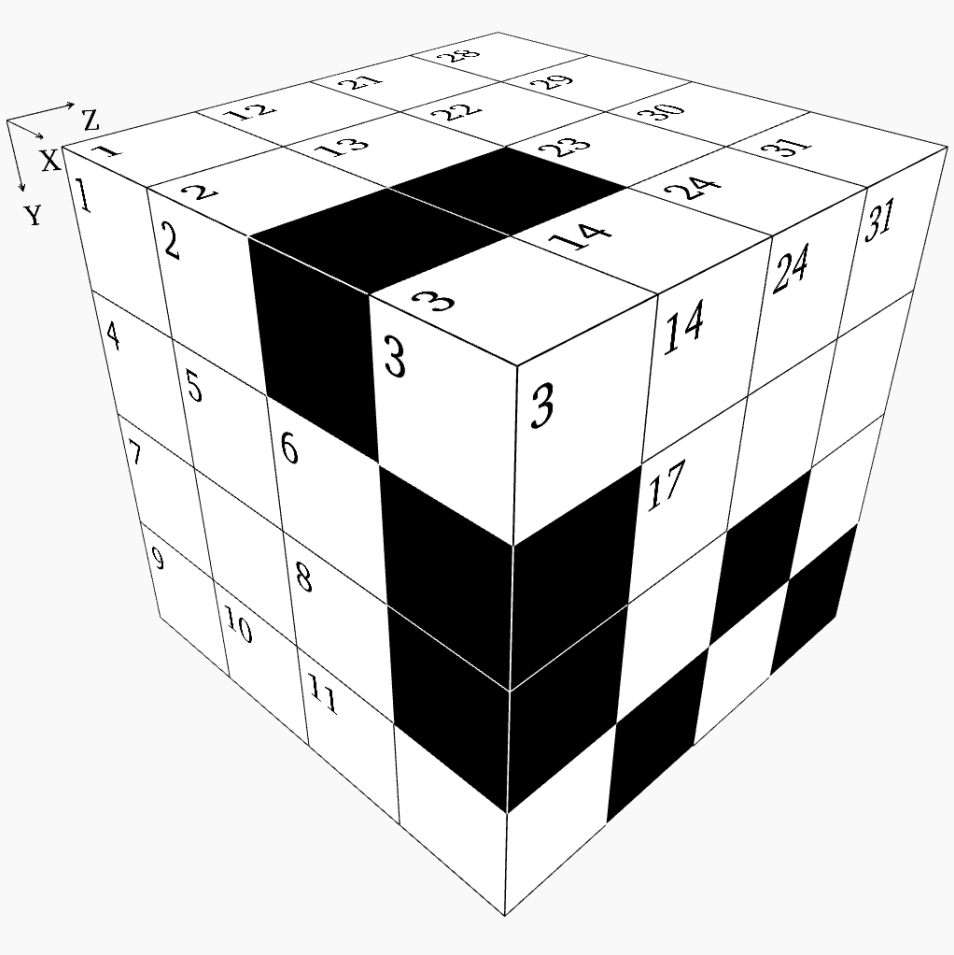
Difficulty: ★★☆☆☆

Cube - Challenging Puzzle #50

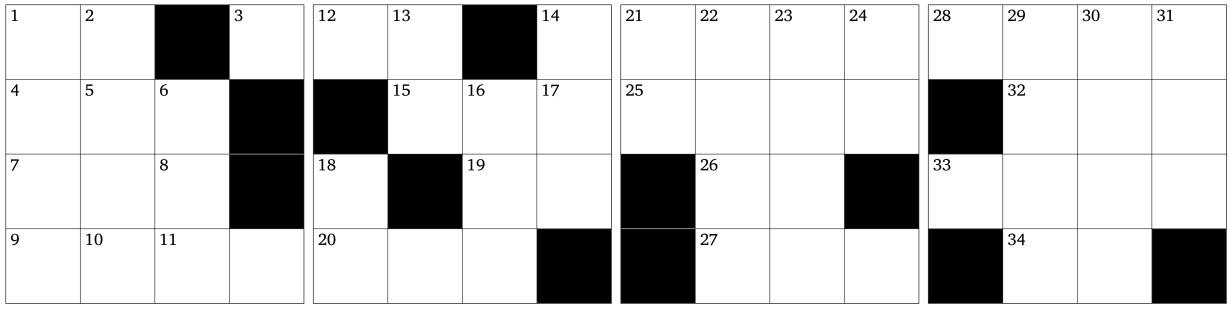


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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:



X Direction

1 Y21 plus half of Z9
4 Y18 plus Z9
7 Y16 minus Y24
9 Rearranged digits of Y23
12 X19 minus Y21
15 Mean of X7 and X20
19 Twice a prime number
20 Six times a prime number
21 X28 plus X32
25 Eight hundred ninety-two more than Y2
26 Mean of Y18 and X19
27 Thirty-four times a prime number
28 Mean of X21 and Y14
32 Twelve times Z9
33 Mean of X9 and Y6
34 Z6 minus Y23

Y Direction

1 Z1 plus X19
2 Z3 plus X27
6 X7 minus X12
13 Z9 reversed
14 Two-thirds of Y16
16 Twenty-four times a prime number
18 Four-fifths of X34
21 X34 minus X26
22 Z2 minus Z8
23 One thousand six hundred eighty-two less than X25
24 X4 minus Z7
29 Seventy-seven times a square
30 Fifty-five times a prime number
31 X33 divided by sixteen

Z Direction

1 A prime number
2 Twice a prime number
3 Fourteen times a prime number
5 Seven times a prime number
6 A prime number
7 Mean of Z26 and Y24
8 Twenty-five times a prime number
9 Y13 reversed
10 A palindrome
11 One thousand five hundred fifty-seven more than Y29
17 X27 minus Y24
23 Mean of Y24 and X19
26 X32 divided by X12

Solution: