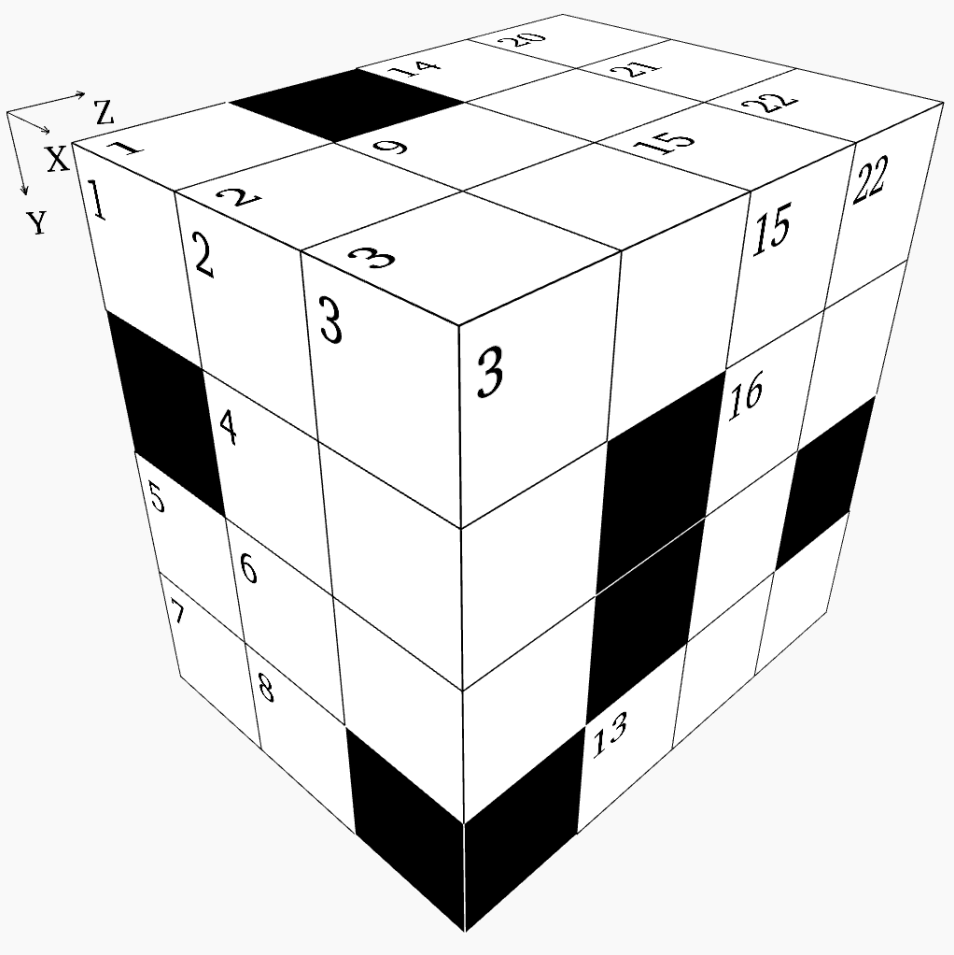
Difficulty: ★★☆☆☆

Box - Challenging Puzzle #17

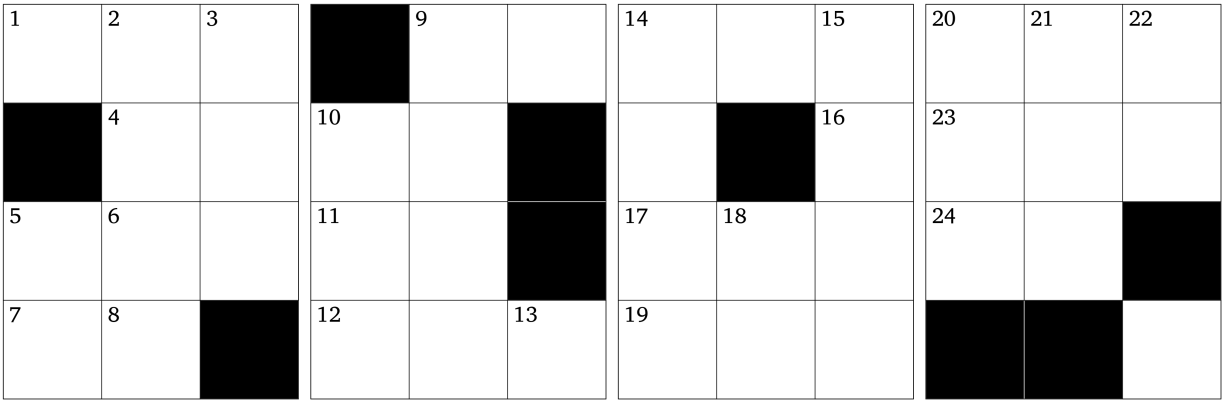


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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 Four times a prime number
4 X20 minus Y21
5 Y14 divided by Z4
7 Four-fifths of X23
9 Z13 minus Z16
10 Y14 divided by X5
11 Mean of Z14 and X24
12 A prime number
14 X17 plus Z16
17 A prime number
19 A square
20 Z13 plus X23
23 Mean of Y20 and Z4
24 Consecutive digits in descending order

Y Direction

2 Twice a prime number
3 Thirty-one times X10
5 Half of X1, then subtract Y3
9 Twice the result of Z3 plus Y18
10 Y3 minus Y20
14 Thirty-nine times a prime number
15 Thirteen times a prime number
18 Mean of Y5 and X10
20 Seven times a prime number
21 Mean of Z8 and Y10
22 Mean of Y18 and X11

Z Direction

2 Twice a square
3 Eighteen times a prime number
4 Y22 divided by five
5 Fifty-three times a prime number
6 Twice a prime number
7 Z8 plus X5
8 X23 plus Z10
10 Mean of X24 and Y10
13 Y18 plus Y22
14 Twice the result of Z13 minus Y22
16 Three times a prime number

Solution: