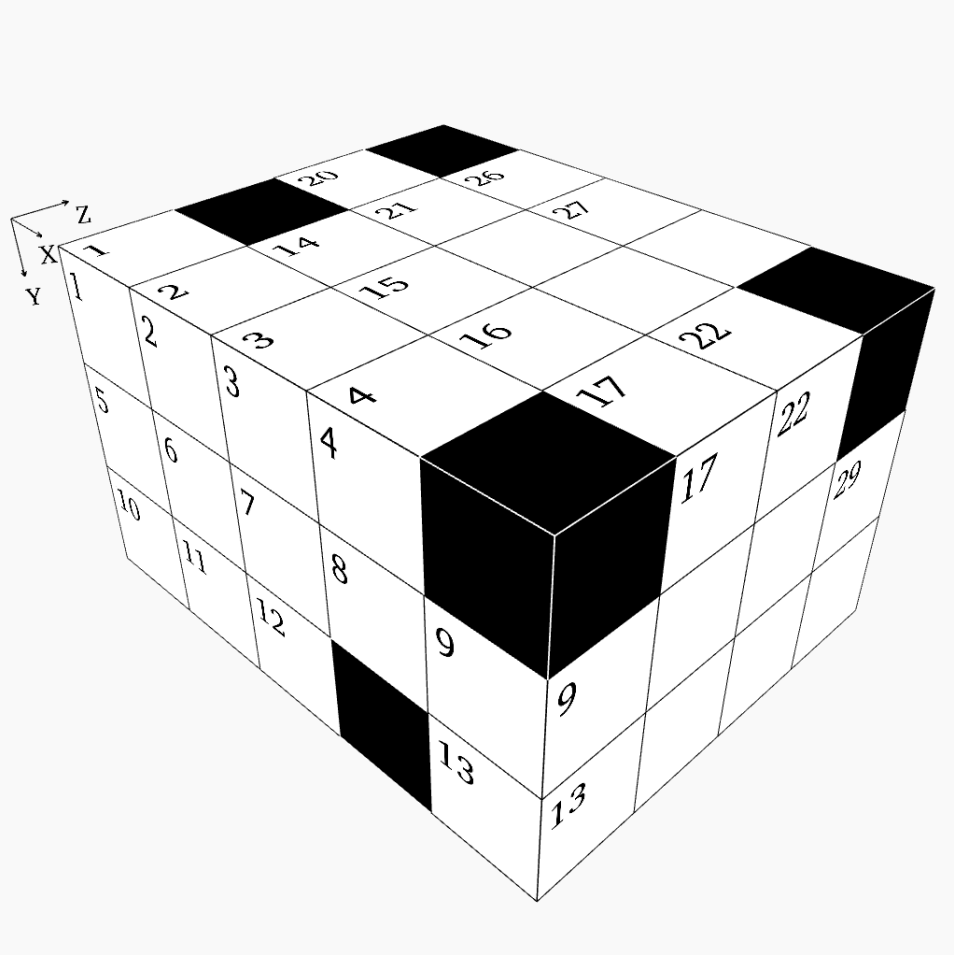
Difficulty: ★★☆☆☆

Box - Challenging Puzzle #55

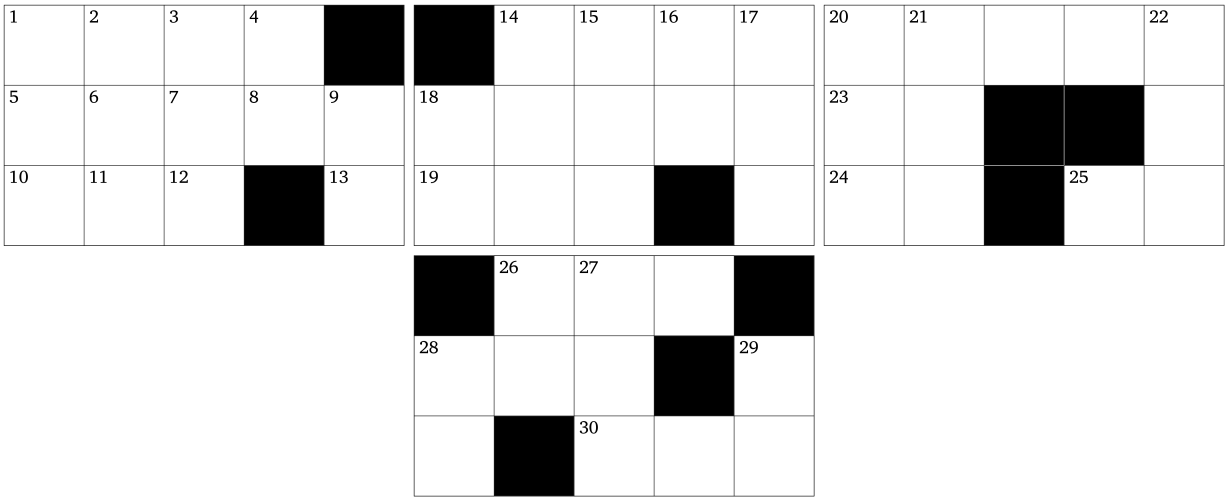


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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
5 First two digits are the same as first two digits of Z3
10 Twice a prime number
14 Z8 times Y4
18 Thirty-five times a prime number
19 A square
20 Four times a prime number
23 Twice the result of Y28 minus Z7
24 Y17 divided by Y29
25 X24 reversed
26 Y29 times Y26
28 Mean of Y20 and Y27
30 Z5 divided by three

Y Direction

1 Y21 minus X30
2 Eighty-four times Y18
3 Twice Y4
4 Seven times a square
9 X24 minus Y18
14 Mean of X30 and X25
15 Half of X10, then subtract Y1
16 Y26 plus Z7
17 Y2 minus Y16
18 Y17 divided by X24
20 Y21 minus X30
21 Eight times a prime number
22 Seven times Y26
26 X26 divided by Y18
27 Mean of Z17 and Y2
28 Consecutive digits in ascending order
29 Z8 minus Z7

Z Direction

2 Four times a prime number
3 Fifteen times a prime number
4 Nine times a prime number
5 Mean of X1 and X28
6 A prime number
7 A square
8 A square
9 X20 minus Z13
10 Thirty-four times a prime number
11 Two-fifths of Z3
12 Y2 minus Y17
13 Seventeen times a prime number
17 Twice Y26
25 Same as X25

Solution: