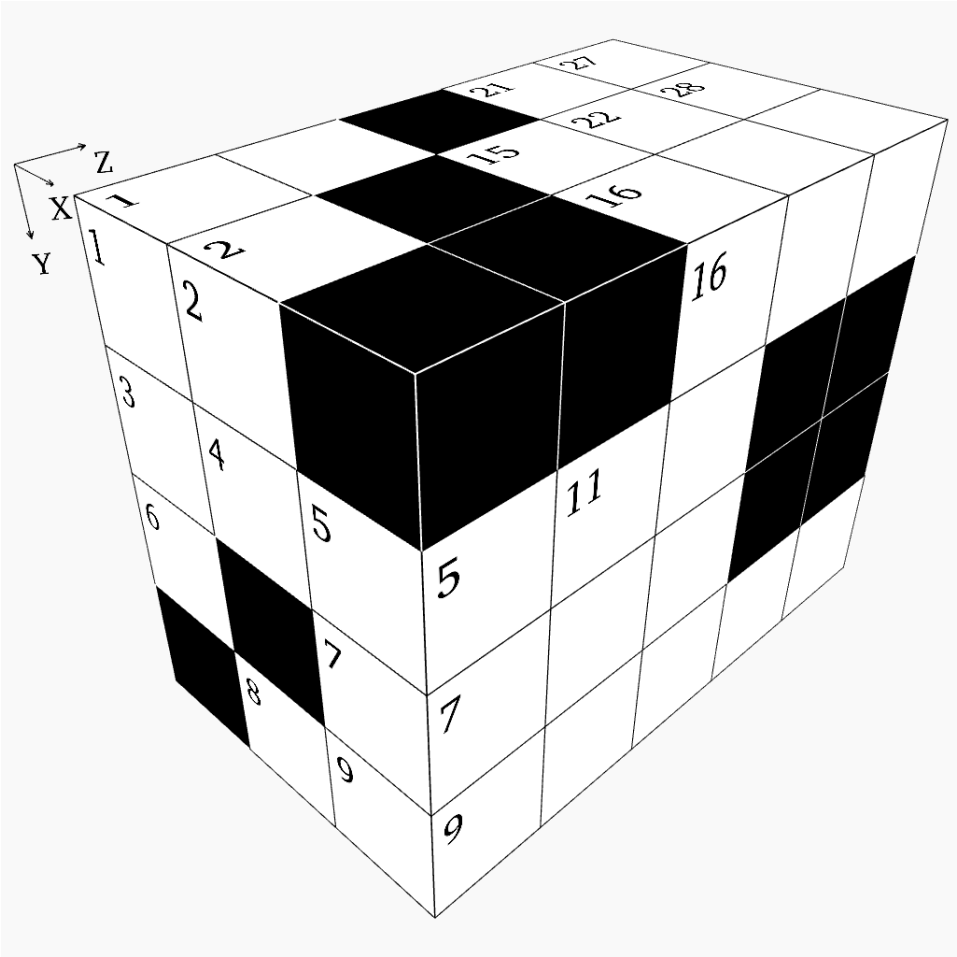
Difficulty: ★★☆☆☆

Box - Challenging Puzzle #18

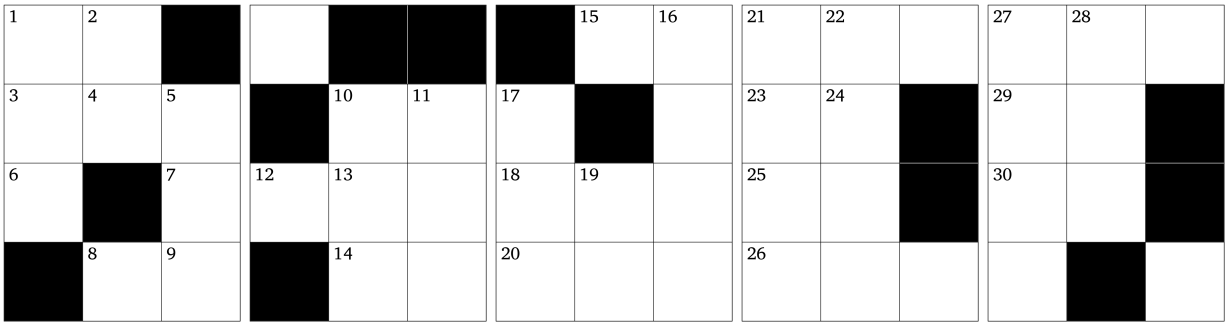


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

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 Mean of Z1 and Z4
3 X15 plus Z17
8 A square
10 Mean of Y2 and Y17
12 Twice a prime number
14 Mean of X25 and X8
15 Mean of X10 and X30
18 Z17 minus Z24
20 Twenty-seven times Y2
21 Z6 divided by Z5
23 Y17 minus X1
25 Four-fifths of Y19
26 Z4 plus Y11
27 Four times a prime number
29 Twice X25
30 Z15 divided by Y2

Y Direction

1 Z7 plus X25
2 X14 minus X1
5 X29 plus Z1
10 Z20 plus X20
11 Twice the result of Z16 minus X18
16 Thirteen times a prime number
17 Z20 minus X3
19 Mean of X8 and Z1
21 Fifty-two times X23
22 Twice a prime number
27 Seventy-nine times Z4
28 A prime number

Z Direction

1 Mean of X8 and Z24
4 A square
5 X23 plus X8
6 Last two digits are the same as X25
7 X27 plus X29
8 Ninety-one times X23
9 A prime number
13 Three times a prime number
15 Y28 minus Y1
16 Consecutive digits unordered
17 Half of X26, then subtract Z21
20 Z7 minus Z4
21 Mean of Z24 and Z4
24 X1 minus Y2

Solution: