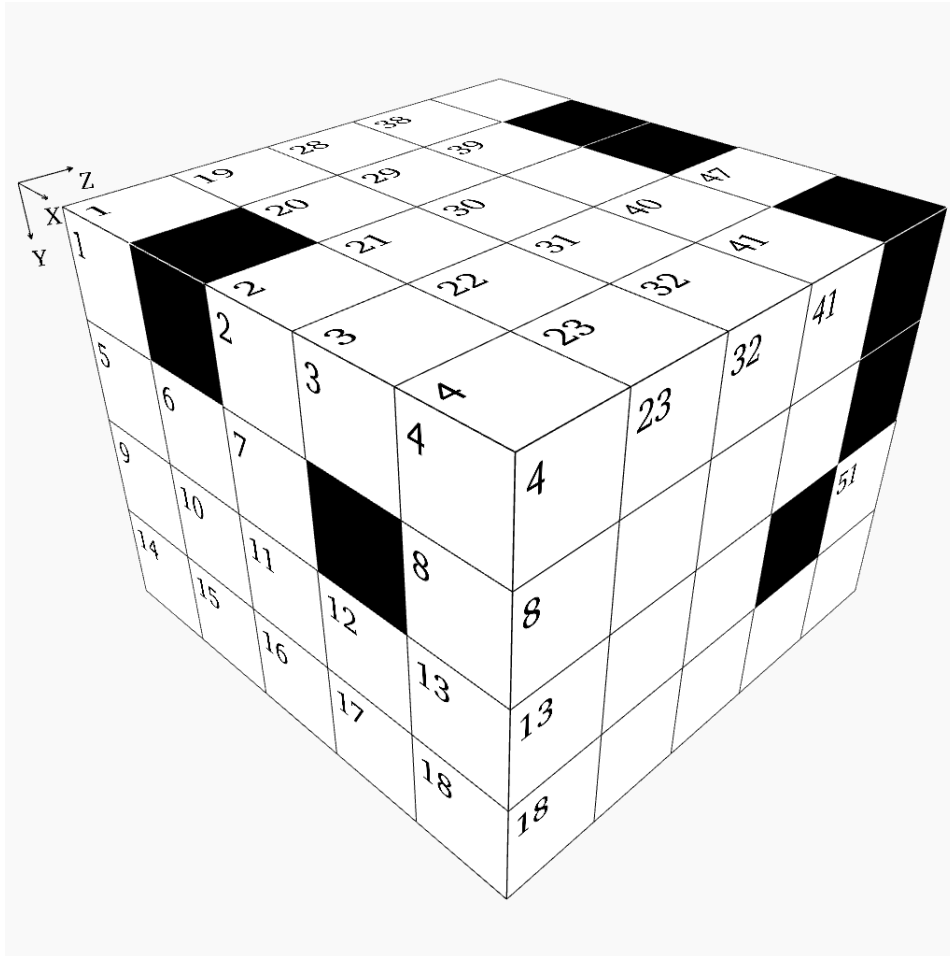


Box - Hard Puzzle #29



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:

1	2	3	4	19	20	21	22	23	28	29	30	31	32	
5	6	7	8	24			25		33					
9	10	11	12	13	26							34	35	
14	15	16	17	18	27					36			37	

38	39		40	41				47	
42			43				48	49	
	44				50				51
45		46					52		

X Direction

- 2 A prime number
- 5 Four times a prime number
- 9 Forty-five times a prime number
- 14 Forty-three times a prime number
- 19 X_{14} minus Y_{12}
- 24 Z_{13} times X_{36}
- 26 Six times a prime number
- 27 Y_{49} plus half of X_{38}
- 28 A square
- 33 Four thousand five hundred fifty-seven more than Z_{14}
- 34 A prime number
- 36 Z_{16} plus X_{37}
- 37 A square
- 38 Seven thousand nine hundred forty-six less than X_{33}
- 42 A square
- 43 Mean of X_{36} and Y_{50}
- 45 X_{50} plus half of X_{33}
- 48 Z_{46} plus X_{43}
- 50 Four thousand nine hundred seventy-two more than Z_1
- 52 Y_{30} minus Y_{41}

Y Direction

- 1 Six times a prime number
- 2 Nine hundred seven more than Y_{23}
- 4 A palindrome
- 6 Three times a prime number
- 12 Y_{22} minus Y_{50}
- 19 Y_{40} minus Y_{12}
- 20 A prime number
- 21 Eight times a prime number
- 22 X_{36} plus Y_{48}
- 23 One thousand eight hundred eighty-three more than Y_{19}
- 28 Seven times a prime number
- 29 Consecutive digits in descending order
- 30 X_{34} minus Y_{12}
- 31 Y_2 minus Y_{22}
- 32 Fifty-seven times a prime number
- 38 Z_{18} divided by X_5
- 39 Mean of X_{28} and X_5
- 40 Seventy-nine times a prime number
- 41 Y_{12} minus X_{42}
- 47 Twenty-one times a prime number
- 48 Y_{51} minus Y_{50}
- 49 Rearranged digits of X_{48}
- 50 Z_7 divided by Y_{48}
- 51 Mean of Z_{16} and Y_{41}

Z Direction

- 1 Y_{39} plus Y_{40}
- 2 Forty-one times a prime number
- 3 X_9 minus Z_9
- 4 First two digits are the same as first two digits of Z_{20}
- 5 Eighteen times a prime number
- 6 Forty-one times a prime number
- 7 Y_{41} plus Y_{49}
- 8 Twice the result of Y_{32} minus Y_{20}
- 9 X_{45} divided by sixty-one
- 10 X_{37} reversed
- 11 Z_{25} minus Y_{47}
- 13 Three times a prime number
- 14 A prime number
- 15 Twice a prime number
- 16 Z_{35} divided by Y_{51}
- 17 Three thousand seven hundred seventy-four less than X_{14}
- 18 First two digits are the same as first two digits of Y_4
- 20 X_2 reversed
- 25 Thirty-one times a prime number
- 35 Fifty-six times a prime number
- 44 Mean of Z_{10} and Y_{22}
- 46 Mean of X_{48} and Y_{50}

