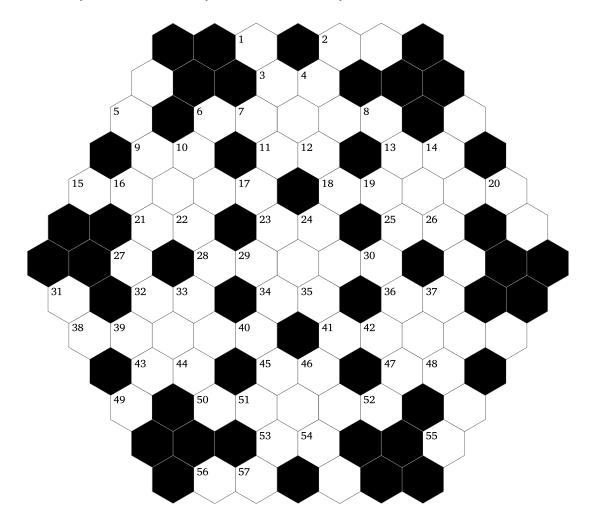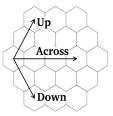# TripleCross - Hard Puzzle #31

This puzzle is like a crossword, but with numbers. Each digit occupies a hexagonal cell and can be a part of a "word" in the across, up, and down directions.

Rules:

1. "Words" may not start with a zero.
2. "Words" in the 'across' direction read from left to right.
3. "Words" in the 'up' direction read along the upward diagonal to the right.
4. "Words" in the 'down' direction read along the downward diagonal to the right.
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.

Across

2 Three times 39 down
3 16 down minus 48 up
6 Four thousand one hundred sixty-five less than 57 up
9 Mean of 26 up and 51 down
11 Half of 19 up
13 Twice the result of 54 up minus 36 across
15 Ten thousand four hundred seventy-one more than 8 down
18 A prime number
21 47 across minus 11 across
23 Mean of 31 down and 51 down
25 10 down plus 2 across
28 Nine thousand nine hundred nineteen more than 41 across
32 16 down minus 7 up
34 54 up minus 21 across
36 54 up minus 7 up
38 Mean of 15 across and 35 up
41 52 up minus 44 up
43 49 up minus 50 across
45 11 across minus 44 up
47 51 down plus 16 up
50 Twenty-four times a prime number
53 39 up plus 11 across
56 Mean of 19 up and 39 up

Up

5 A square
7 22 up minus 39 up
12 16 up plus 51 down
16 42 up minus 39 up
17 17 down plus 3 across
19 Mean of 33 down and 54 up
22 Mean of 3 across and 16 down
26 Mean of 34 across and 54 up
27 18 across minus 40 up
29 Mean of 12 up and 42 down
30 Eleven times a prime number
35 Mean of 43 across and 4 down
39 13 across minus 7 down
40 Thirty-five times a prime number
42 37 down plus 7 up
44 16 up minus 22 up
48 Half of 46 down, then subtract 5 up
49 A prime number
51 45 across minus 21 across
52 Five thousand nine hundred eighteen less than 1 down
54 7 down plus 29 up
55 Twice the result of 52 up minus 41 across
57 Thirty-eight times a prime number

Down

1 Five thousand nine hundred twenty-eight more than 41 across
4 A square
5 Two thousand three hundred ninety-six less than 40 up
7 53 across minus 22 up
8 A prime number
10 33 down minus 36 across
14 39 up plus 23 across
16 Mean of 20 down and 34 across
17 A palindrome
19 9 across plus 35 up
20 44 up plus 55 up
24 Mean of 32 across and 2 across
27 A prime number
29 19 down minus 55 up
30 30 up minus 9 across
31 Mean of 24 down and 54 up
33 13 across plus 23 across
37 46 down minus 7 down
39 54 up minus 42 up
40 Its digits total 7 up
42 Same as 29 down
46 55 up plus 56 across
51 A square

Solution: