SIENA COLLEGE
30th Annual High School Programming Contest
March 24, 2017

Gold Problem #7: Kakuro

Background Information: Kakuro is a logic game from Japan that involves filling a grid with numbers. Similar to Sudoku, the numbers between 1 and 9 are entered into a rectangular grid. Unlike Sudoku, the grid has black cells that indicate clues pertaining to the row/column of contiguous white squares connected to it. The black cells contain a diagonal upper-left to lower-right slash indicating the sum of the numbers below the clue or the sum of the numbers to the right of the clue.

- Each sum is produced by unique digits between 1 and 9, inclusively.
- White spaces(W) are where numbers are entered.
- A black space can be fully black (B), or have a partial clue (23\ or \7) or a full clue (17\24). X\ indicates a sum in the immediate white squares below the clue that add to X. \Y indicates a sum in the immediate white squares to the right of the clue that add to Y. X\Y indicates two sums to the white squares below adding to X and the white squares to the right adding to Y.

Programming Problem:

Input: Two positive integers R and C between 8 and 20 inclusive followed by R rows containing C strings, each separated by a space. Each string will be a W, B, X\, \Y, or X\Y.
Output: R lines of output, with the values in the white squares for each line of the grid going from left to right, separated by spaces. If no white squares exist in a row, print a 0.

Example 1: Input:

```
8 8
B 23\ 30\ B B 27\ 12\ 16\
\16 W W B 17\24 W W W
\17 W W 15\29 W W W W
\35 W W W W W 12\ B
B \7 W W 7\8 W W 7\
B 11\ 10\16 W W W W W
\21 W W W W \5 W W
\6 W W W B \3 W W
```

Output:

```
0
9 7 8 7 9
8 9 8 9 5 7
6 8 5 9 7
6 1 2 6
4 6 1 3 2
8 9 3 1 1 4
3 1 2 2 1
```