### **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

 V1