

MA 103
Homework 2
Due: Thursday, October 22

Instructions: This assignment is to be submitted on Thursday, October 22 by 4 pm to Thayer 222 or in class. You must submit a cover letter and any appropriate documentation with the homework. Show all work for full credit.

You have been asked to help the residents of Highland Falls determine how much candy they should buy for Halloween. Children travel clockwise around the streets, from A to D to B to C. Some are dropped off and picked up at each corner. At the intersection of A and D, an average of 10 are dropped off and 5 picked up each hour. At the intersection of D and B, an average of 8 are dropped off and 2 picked up at each hour. At the intersection of B and C, an average of 3 are dropped off and 7 picked up each hour. At the intersection of C and A, an average of 1 is dropped off and 8 picked up each hour.

a. Do you have enough information to determine the solution for the average number of trick-or-treaters per hour on each street? Show your work.

b. Mr. Scrooge lives in the neighborhood. He gives out candy bars costing 10 cents each and pieces of gum costing 1 cent each. He buys twice as many pieces of gum as candy bars and spends \$12 in total. He has just enough for 3 hours of trick-or-treating and gives an equal number of items to each child. We now know that the average number of trick-or-treaters per hour on D was 30. What street does Mr. Scrooge live on, and how do you know?