



A farmer is trying to decide which farmer's market to go to and sell his two crops: apples and pumpkins. His two options are Troy Waterfront Farmer's Market and Schenectady Farmer's Market, however because the markets are on the same day he can only set up a stand in one location. The cost to set up a stand in Troy is \$500 and Schenectady is \$400.



The spaces of the stands are 700 units and 500 units respectively, for Troy and Schenectady. Once the farmer decides which stand to set up, he needs to decide how many apples and pumpkins to bring in order to fill his stand. One apple takes up 1 units of space and one pumpkin takes up 3.75 units of space.



The farmer assumes that everything he brings to the market will sell. The net profit per apple is \$2 in Troy and \$1.75 in Schenectady. Similarly, the net profit per pumpkin is \$3.25 in Troy and \$2.75 in Schenectady. The farmer wants to attract a variety of customers, therefore the number of apples must not exceed 75% of the total items in the stand and the same for pumpkins, where the number of pumpkins cannot exceed 75% of the number of items in the stand. What should the farmer do if he wants to maximize his profits?