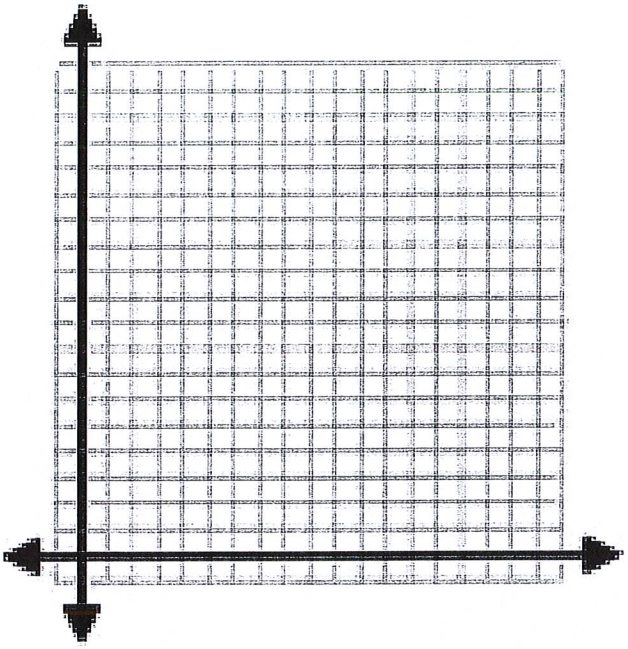
Inequality Application:

1. You have two summer jobs at a youth center. You earn \$8 per hour teaching basketball and \$10 per hour teaching swimming. Let x represent the amount of time (in hours) you teach basketball each week, and let y represent the amount of time (in hours) you teach swimming each week. Your goal is to earn at least \$200 per week.

a. Write an inequality to model this situation. (Pay attention to which way your inequality is facing)

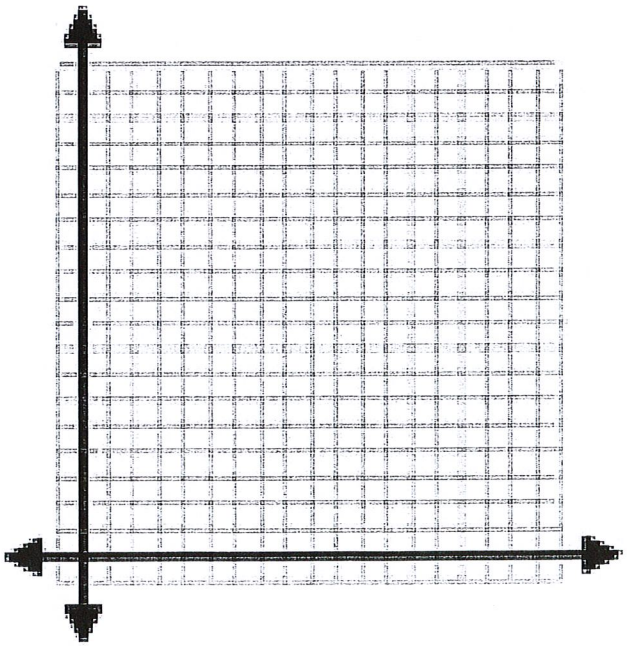
b. Graph the inequality.



c. Give three possible combinations of hours that will allow you to meet your goal.

2. A party shop makes gift bags for birthday parties. They charge \$4 per glow stick placed in the bag and \$10 per t-shirt. Let x represent the number of glow sticks and y represent the number of t-shirts. The goal is to earn at least \$500 for the bags.

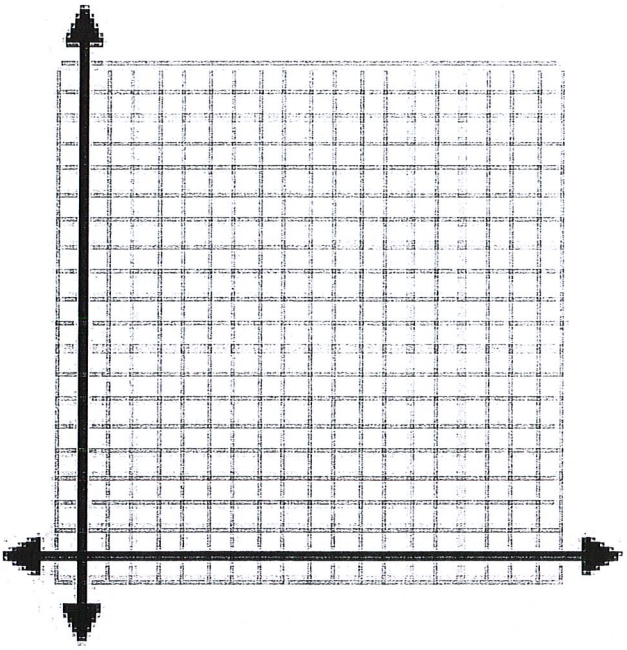
a. Write an inequality that describes the goal in terms of x and y.



b. Graph the inequality

c. Give three possible combinations of pairs of items that will allow the shop to meet its goal.

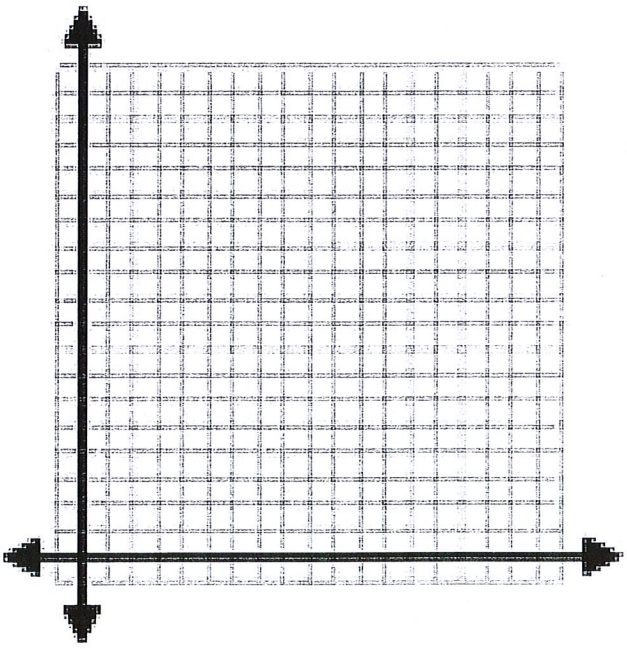
3. In a two-man bobsled competition, the sum of the weight x (in pounds) of the bobsled and the combined weight y (in pounds) of the athletes must not exceed 860 pounds. Write and graph an inequality that describes the possible weights of the bobsled and the athletes. Identify and interpret one of the solutions.



4. You gathered 36 apples from your backyard apple tree in order to make apple pies and applesauce. You use 7 apples to make one apple pie and 5 apples to make one pint of applesauce.

a. Write an inequality that describes the possible numbers of apple pies and pints of applesauce that you can make.

b. Graph the inequality



c. Give three possible combinations of apple pies and pints of applesauce that you can make.

d. Identify the domain and range.