

NOTES: Systems of Inequalities

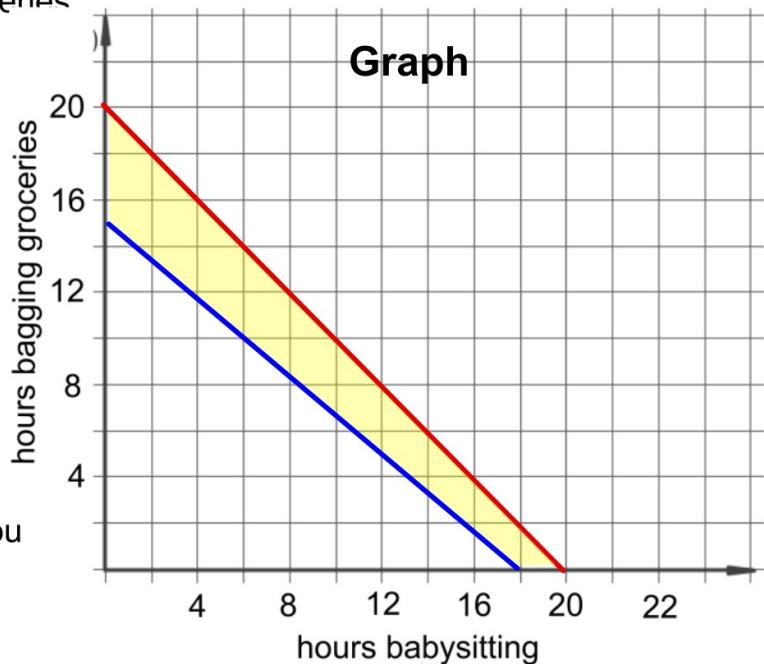
1) Suppose you have two jobs, babysitting, which pays \$5 per hour, and bagging groceries, which pays \$6 per hour. You can work no more than 20 hours each week, but you need to earn at least \$90 per week. How many hours can you work at each job?

a) Write a system of inequalities. Let x = the # of hours babysitting

Let y = the # of hours bagging groceries

b) If you work 4 hours baby-sitting, how many hours do you have to work bagging groceries?

c) If you work 10 hours bagging groceries how many hours must you work babysitting?

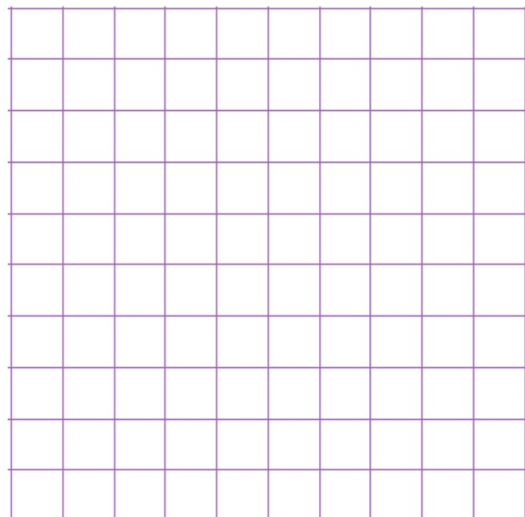


**What is a system of Inequalities?
What is the solution for the system?**

Example 1: Solve each system of inequalities

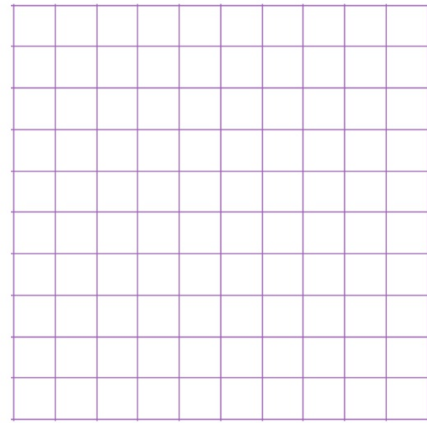
a) $y \leq -2x + 4$

$x > -3$



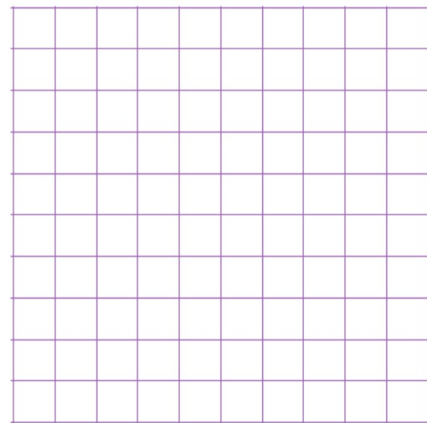
$$b) y \leq 3x - 6$$

$$y > -4x + 2$$



$$c) x - 2y < 6$$

$$y \leq \frac{3}{5}x + 5$$



Word Problems

Dee has at most \$150 to spend on restocking dolls and trains at her toy store. Dolls cost \$7.50 and trains cost \$5.00. Dee needs no more than 10 trains and she needs at least 8 dolls.

Step 1) Identify what the x and y values represent

Step 2) Write out inequalities that represent the given information

Step 3) Graph

What are two possible combinations of toys Dee can buy?

