Algebra 1: 7.1 HW - Part 2 **Name** _____ **Period** _____
Graphing Inequalities – Word Problems

Strategies for Writing a Linear Inequality

1. _____ through the entire problem.
2. _____ the important information and key words that you need to solve the problem.
3. _____ your variables.
4. _____ each linear inequality. *Be careful to choose the correct inequality sign!*

Define the two variables and write a linear inequality to represent each problem situation.

1. Tanya is baking blueberry muffins and brownies for a school event. She needs ***at least*** 500 muffins for the event.

   x = _____

   y = _____

   Inequality: _____

2. Hiro needs to buy pens and pencils for school. Pencils cost $1 each and pens cost $2.50 each. He has $10 to spend.

   x = _____

   y = _____

   Inequality: _____

3. Patti makes decorative flower pots. The materials for each pot cost $20. She plans to charge ***no less than*** $6 per hour of labor plus the cost of materials.

   x = _____

   y = _____

   Inequality: _____

4. HHS budgets ***a maximum of*** $250 per classroom to buy workbooks. A math workbook costs $10 and a science workbook costs $12.

   x = _____

   y = _____

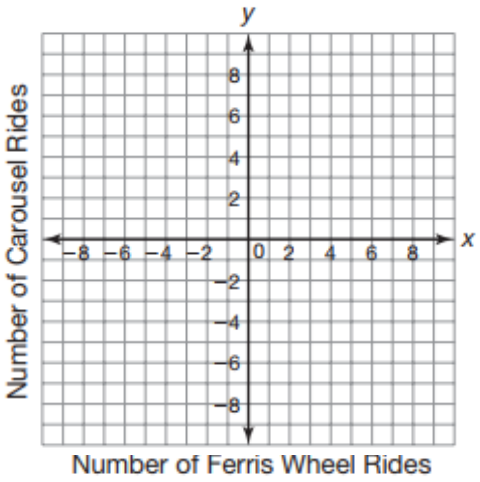
   Inequality: _____

Write the inequality that represents each problem situation. Graph the inequality. Then, determine if the ordered pair is a solution for the problem situation.

5. Marcus has 50 tokens to spend at the school carnival. The Ferris wheel costs 7 tokens and the carousel costs 5 tokens.
   x = number of rides on the Ferris wheel
   y = number of rides on the carousel
   a. Write an inequality that represents the possible ways Marcus can use his tokens for the two rides.

   b. Graph the inequality. Then, use the graph to determine if the ordered pair (6, 3) is a solution for the problem situation.

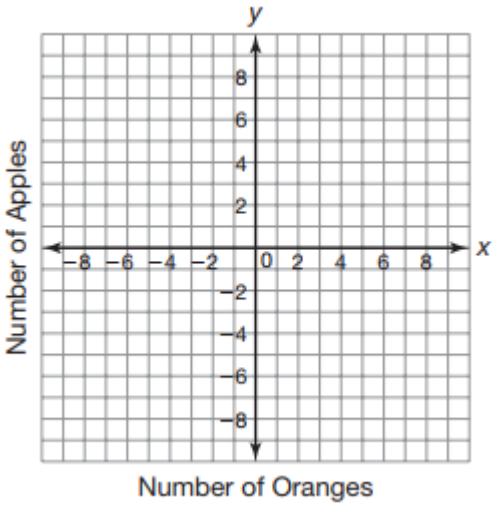
   c. Algebraically prove whether the ordered pair (6, 3) is a solution for the problem situation.



6. Sophia has \$2 to buy apples and oranges. Oranges cost \$0.50 each and apples cost \$0.25 each.
   x = number of oranges
   y = number of apples
   a. Write an inequality that represents the possible ways Sophia can spend her \$2.

   b. Graph the inequality. Then, use the graph to determine if the ordered pair (2, 3) is a solution for the problem situation.

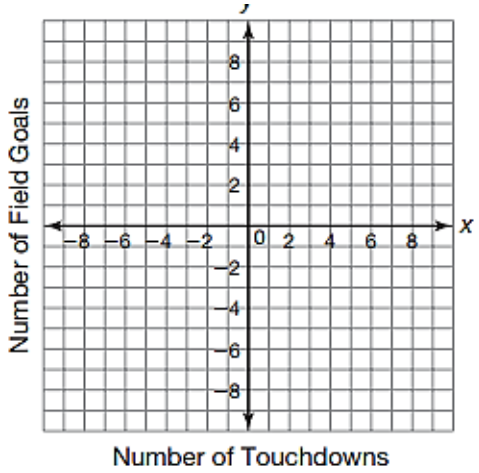
   c. Algebraically prove whether the ordered pair (2, 3) is a solution for the problem situation.



7. Noah plays football. His team's goal is to score at least 15 points per game. A touchdown is worth 6 points and a field goal is worth 3 points. Noah's league does not allow teams to try for the extra point after a touchdown.

   a. Write an inequality that represents the possible ways Noah's team can score at least 15 points to reach their goal.

   b. Graph the inequality. Then, use the graph to determine if the ordered pair (6, -1) is a solution for the problem situation.



   c. Algebraically prove whether the ordered pair (6, -1) is a solution for the problem situation.

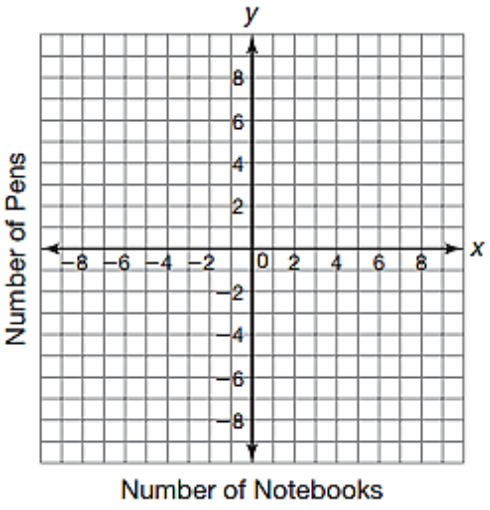
   d. Does the ordered pair (6, -1) make sense as a solution in the context of this problem situation? Why or why not?

8. Lea has $5 to buy notebooks and pens. Notebooks cost $1.25 each and pens cost $0.50 each.

   a. Write an inequality that represents the possible ways Lea can spend her $5.

   b. Graph the inequality. Then, use the graph to Determine if the ordered pair (5, 2) is a solution for the problem situation.

   c. Algebraically prove whether the ordered pair (5, 2) is a solution for the problem situation.



   d. Does the ordered pair (5, 2) make sense as a solution in the context of this problem situation? Why or why not?