Name:_____   Date:_____

Notes
Algebra Section 6.7
Pages 405-412

Goal: "You will graph linear inequalities in two variables"

Vocabulary: Linear inequality in two variables: The result of _____ the = sign in a

_____ _____ with a _____, _____, _____, or _____.

Solution of an inequality in two variables: x and y are an _____ _____ (,   ) that

produces a _____ _____ when the values of x and y are _____ into the

_____.

Determine if an ordered pair is a solution:

1) Plug in for x and y and solve.

2) Does it produce a true statement?

Ex: Which of the following are solutions to $x - 3y \le 6$?

a. $(0, 0)$ b. $(6, -1)$ c. $(10, 3)$ d. $(-1, 2)$

Ex: Tell whether the given ordered pair is a solution to: $-x + 2y < 8$

a. $(0, 0)$ b. $(0, 4)$ c. $(3, 5)$ d. $(-2, 3)$

Graphing a linear inequality in two variables:

1) Graph the inequality the same way you would graph a line.

Either use _____ or _____.

*If the _____ is _____or_____, draw a dotted line. This means that the _____ on

the line are _____ part of the solution.

*If the _____ is _____or_____ draw a solid line. This means that the _____ on
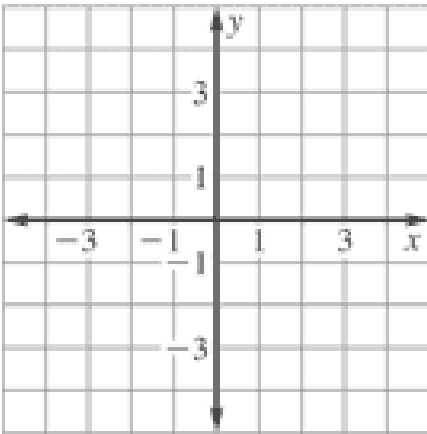
the line are _____ in the solution.

2) Choose a _____ _____(typically the _____ if possible) that is located on one side of

the line. Plug your _____ _____ into the _____ to see if it works.

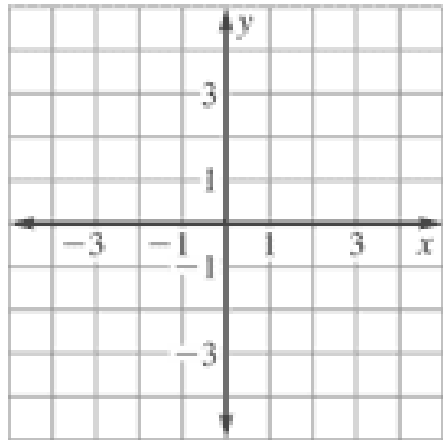If it does, then the test point is part of the solution. _____ the side containing the test point.

If it does not work, then the test point is not part of the solution. _____ the other side.

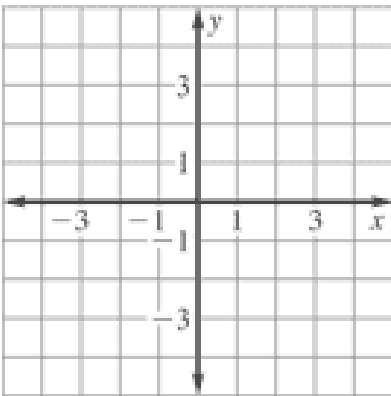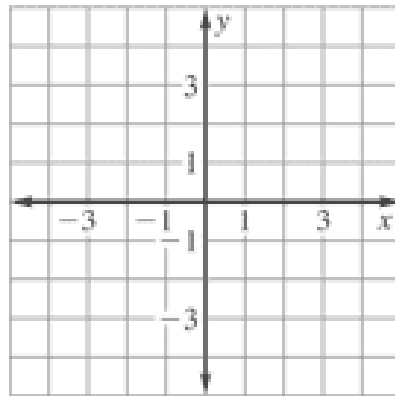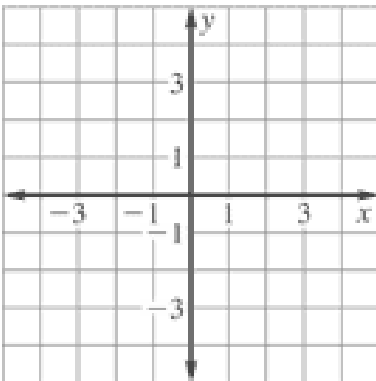**Graph the following linear inequalities:**

Ex: $y > 4x - 3$

Ex: $y \geq 3x + 1$

Ex: $x + 2y \leq 0$

Ex: $x + 4y < -8$

Ex: $x - y \geq -1$

Ex: You have 2 summer jobs at a youth center. You earn $8 per hour giving basketball lessons and $10 giving swimming lessons. Let x represent the number of hours you spend coaching basketball and y represent the amount of time you spent giving swimming lessons. Your goal is to earn at least $200 per week.

    a. Write an inequality to represent the situation

    b. Graph the inequality.

    c. Give two possible solutions so you would make the amount you want.
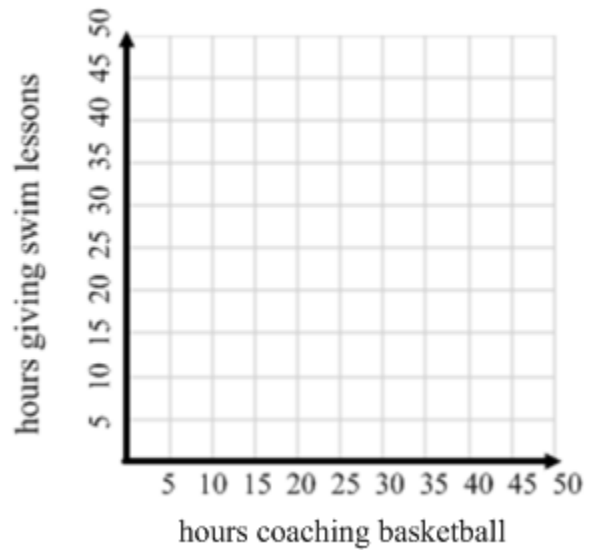
Write the inequality of each graph shown.