**Linear Inequalities**

Remember how Chapter 2 was all about equations and then Chapter 3 was about inequalities? Remember how it was basically the same thing except instead of equal signs we had inequality signs? The next 2 packets will be exactly like that. We’re going to be doing the same things we’ve been doing, except now with inequalities.

\*\* First let’s get a simple type of problem out of the way. \*\*

**Example #1**

Tell whether the ordered pair (7,3) is a solution to the inequality y < x – 1.

All you have to do here is plug in the x and y values. If the inequality holds true, then it’s a solution.

(3) < (7) – 1

3 < 6

Is 3 < 6? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Therefore the point (7,3) is a solution to the inequality.

\*\* Now let’s move on to the actual meat of this section. Here is the series of steps you will follow for the next example problem. \*\*

***Series of Steps:***

**Step 1:** Solve the inequality for y.

**Step 2:** Graph the “boundary” line. Use a solid line for  and use a dashed line for < or >.

**Step 3:** Shade the side of the line where the solutions belong. Shade above the line for > or  and shade below the line for < or .

**Example #2**

Graph the solutions of the linear inequality 

Step 1: Is the inequality solved for y? Yes or No? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 2: Graph the boundary line. To do this, just pretend that inequality sign is an equal sign. Graph the line y = 3x + 4.

Since the inequality sign is <, will it be a solid line or a dashed line? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 3: Decide which side of the line needs to be shaded. \*\* If you are unsure, choose a point on one side of the line. Take that point and plug it into the inequality. If the inequality is true, you know to shade that side of the line. If it is untrue, you will shade the other side of the line. \*\*

Come show me your graph so I know you’re on the right track!

**Assignment:** Problems Below + pg 418 #2-9, 12-19