

Warm Up

- Graph paper
 - Fold it in half HOT DOG
 - Unfold it
 - Fold it in half HAMBURGER
 - Fold it in half HAMBURGER
 - Unfold it
 - Label it 1 – 16
 - Draw 16 graphs from -5 to 5
- On warm up sheet write graph paper

Algebra 1 CC Unit 5 Lesson 1 Graphing inequalities

Today

- Students will be able to graph inequalities by hand and in the calculator (at the end)
- **A-REI.D.12** Students will produce the graph of a solution set of a linear inequality in two variables. Convey the mathematics behind the dotted versus solid boundary lines used when graphing the solutions to linear inequalities. Demonstrate understanding of whether the points on the boundary line of the graph of a linear inequality in two variables should be included as part of the solution set. Explain why a particular shaded region represents the solution of a given linear inequality or system of linear inequalities.

Review

- Graph the equation
- 1. $y = 2x - 3$
- 2. $2x - 3y = 6$
- 3. $y = \frac{3}{4}x - 2$
- 4. $-2x + 4y = 8$

Review (slope intercept form)

- Fill in the blanks

When graphing an equation that says $y = \dots$ I ALWAYS start by graphing the _____ and then I use the _____ to find another point from the start. Then I draw a line through the 2 points.

Review (Standard form)

- Fill in the blanks

When I need to graph a problem in standard form I find the _____. I do this by _____. Then I plot the 2 points and draw a line through them.

Graphing Inequalities

- N2K (this is used for slope intercept form)
- Standard form ... if y is negative the inequality is opposite



Type of Line

Shading

Graphing Inequalities

- Graph the inequality
- 1. $y > -2x + 4$
- 2. $y < 3x - 1$
- 3. $y \geq \frac{1}{2}x - 2$
- 4. $y \leq -\frac{2}{3}x + 3$

Graphing Inequalities

- Graph the inequality
- 5. $2x + 3y > 6$
- 6. $3x - 4y < 12$
- 7. $x + y \geq -2$
- 8. $x - 2y \leq -4$

Graphing Inequalities

- Graph the inequality
- 9. $y > -4x + 2$
- 10. $y < 3x$
- 11. $y \geq \frac{3}{4}x - 3$
- 12. $y \leq -\frac{5}{3}x + 2$

Graphing Inequalities

- Graph the inequality
- 13. $3x - y > 6$
- 14. $2x - 3y < -6$
- 15. $3x + 4y \geq -12$
- 16. $4x - 4y \leq 4$

Review

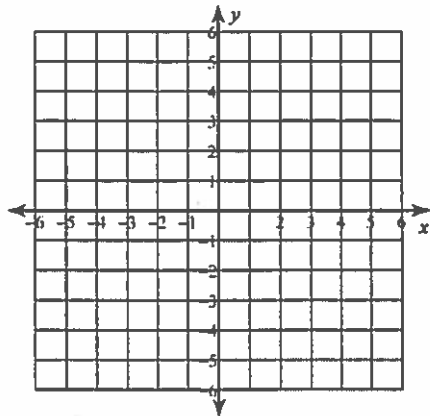
- YOU NEED TO UNDERSTAND THE CALCULATOR CAN NOT TELL YOU IF IT IS A DOTTED OR SOLID LINE
- Solve equation for y
- Type inequality into $y=$
- Scroll left until dotted diagonal line is blinking
- Press enter twice for GT
- Press enter 3 times for LT

Graphing Linear Inequalities

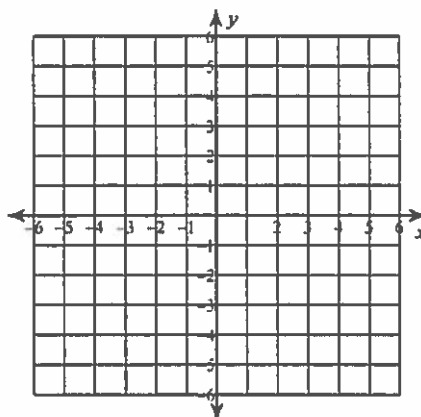
Date _____ Period _____

Sketch the graph of each linear inequality.

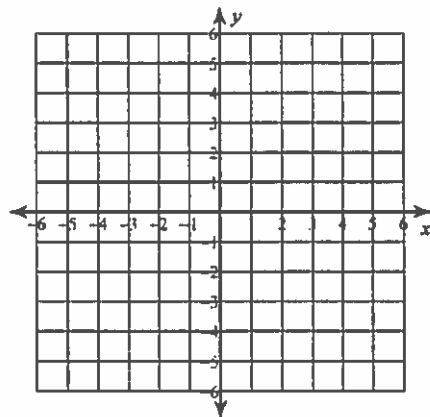
1) $y \geq -3x + 4$



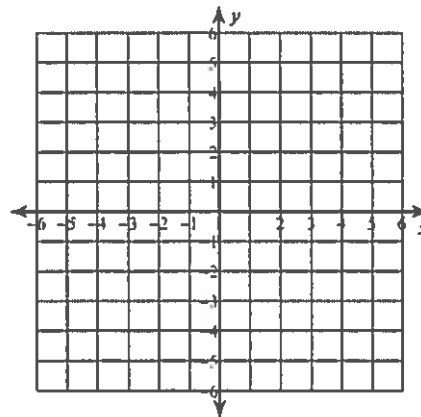
2) $y \leq \frac{3}{5}x - 5$



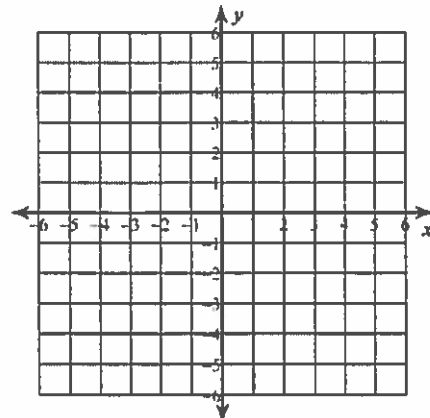
3) $y > -x - 5$



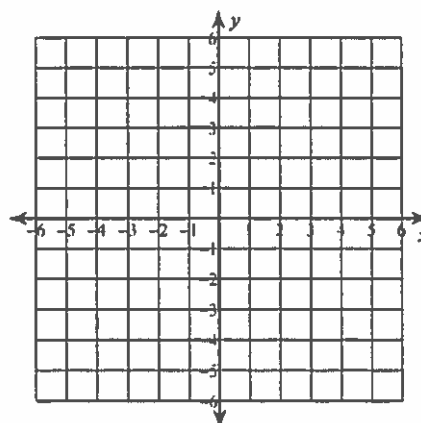
4) $y > -4$



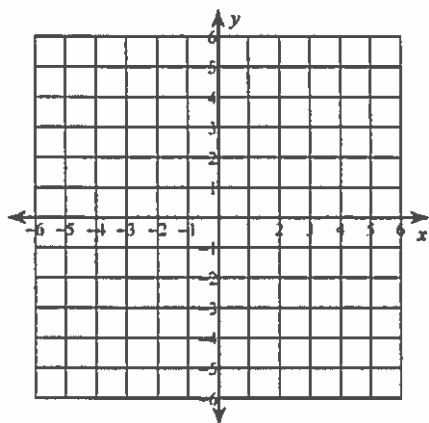
5) $y > 2x - 5$



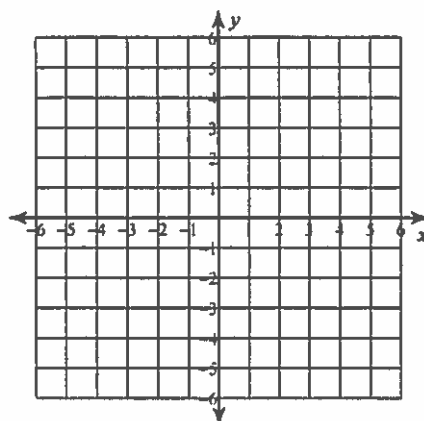
6) $y \geq \frac{7}{4}x + 2$



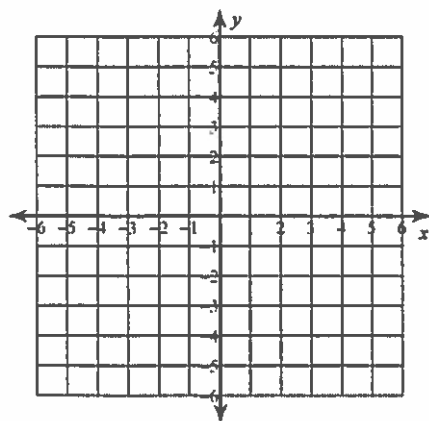
7) $x < -5$



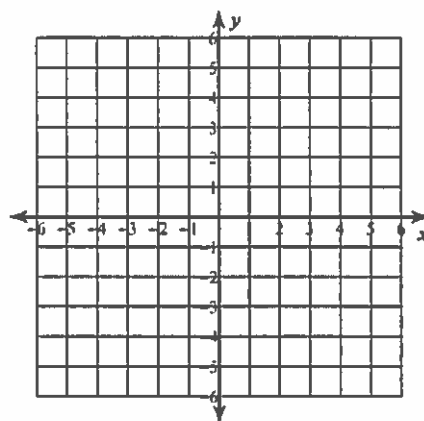
8) $y \leq \frac{4}{3}x - 4$



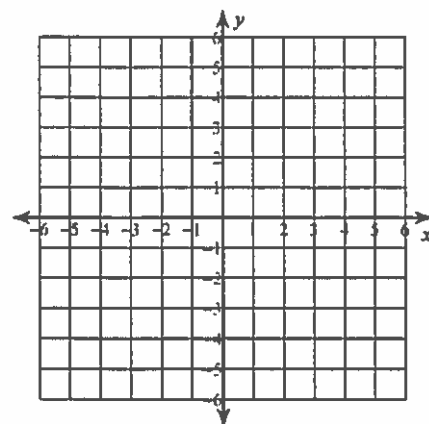
9) $3x - 2y < 10$



10) $5x - 3y \leq -15$



11) $y \geq 4$



12) $x - y > 2$

