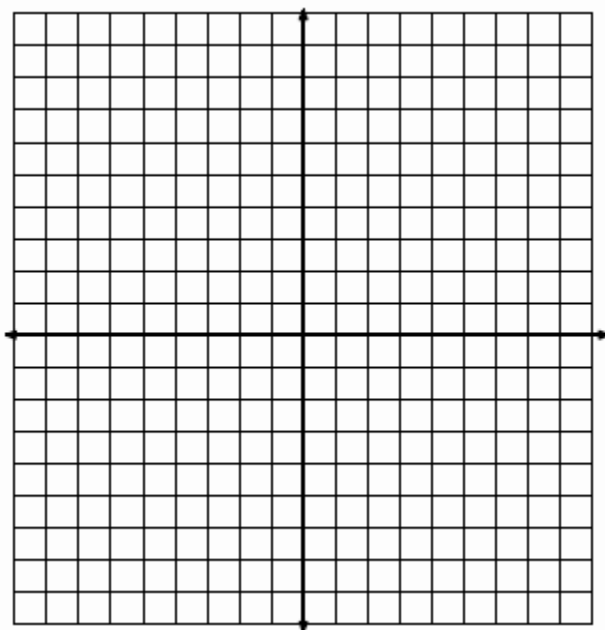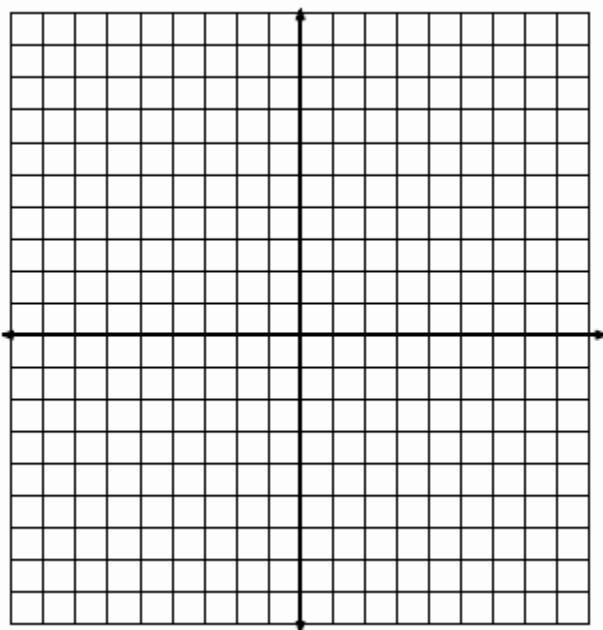Name:_____ Per:_____

5.6 More or Less

A Practice Understanding Task

Solve the following systems of inequalities:

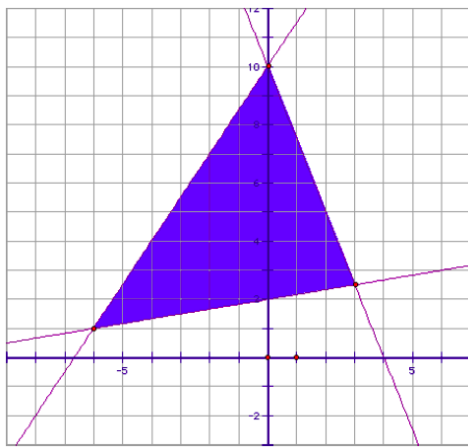1.
$$\begin{cases} -5x + 3y \le 45 \\ 2x + 3y > 24 \end{cases}$$

2.
$$\begin{cases} -10x + 6y \le 90 \\ 6x + 9y > 36 \end{cases}$$

3. Is the point (-3, 10) a solution to the system in problem #1? Why or why not?

4. Write the system of inequalities whose solution set is shown below:

5. Amanda is examining Frank's work on #4, when she exclaims, "You have written all of your inequalities backwards. The solution set to your system would look like this."

What do you think about Amanda's statement?
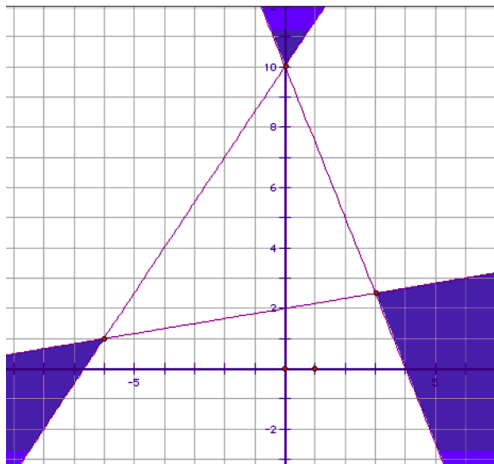
Carlos and Clarita have found a cat food that seems to appeal to even the most finicky of cats, *Figaro Flakes*. They want to mix it with a less expensive cat food, *Tabitha Tidbits*, to make an affordable, but tasty cat food.

Tabitha Tidbits contains 4 grams of protein and 6 grams of fat per scoop. *Figaro Flakes* contains 12 grams of protein and 4 grams of fat per scoop. Carlos wants to make a meal for cats that contains at least 8 grams of protein and no more than 6 grams of fat per scoop.

6. Write and solve a system of inequalities that Carlos can use to determine possible combinations of *Tabitha Tidbits* and *Figaro Flakes* that will satisfy both of these constraints.

7. Based on your work, suggest at least 3 different "recipes" using each type of cat food that meets Carlos' nutritional goals. For example, would 1 scoop of *Tabitha Tidbits* and ½ scoop of *Figaro Flakes* be an acceptable meal?

| READY, SET, GO! | Name | Period | Date |

READY

Topic: Using substitution to find a missing value.

Substitute the given value of x into the equation to find the value of y.

1. $5x - 9y = 73; x = 2$ 2. $-4x + 9y = 16; x = 5$ 3. $3x - 8y = 1; x = -5$

4. $-14x + 5y = 51; x = 1$ 5. $9x - 7y = 21; x = 0$ 6. $12x - 15y = -42; x = \frac{1}{4}$

Use the given value to find the value of the other variable that is not provided.

7. $5a + 2b = -37$

$b = -1$

8. $13f - 7g = 10$
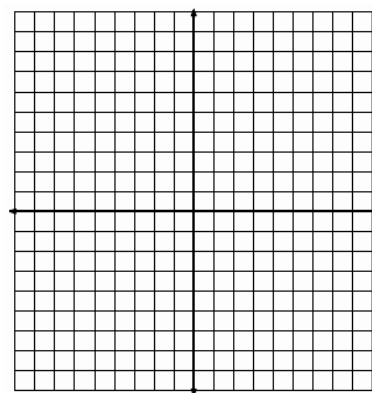
$f = -3$

9. $2m + 3z = -22$

$z = -9$

SET

Topic: Examining the impact of the direction of the inequality symbol
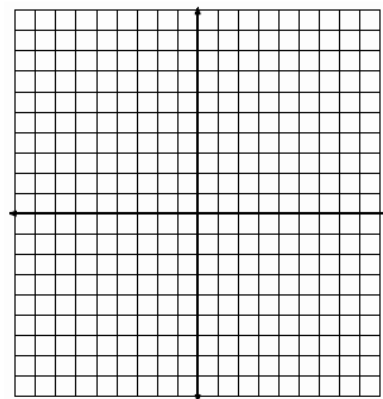
10. Graph $y > \frac{3}{4}x - 2$ and $y < \frac{3}{4}x + 3$ on the grid at the right.

11. What is the relationship between the two lines in your graph?

12. Name 3 points that satisfy both inequalities.

13. Now, graph $y < \frac{3}{4}x - 2$ and $y > \frac{3}{4}x + 3$
    on the next grid at the right.

14. Can you name 3 points that satisfy both
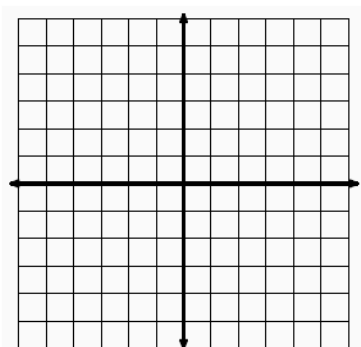   inequalities for this system?

15. Compare the graph for problem 10 with the graph for problem 13.
    How are they the same?

    How are they different?

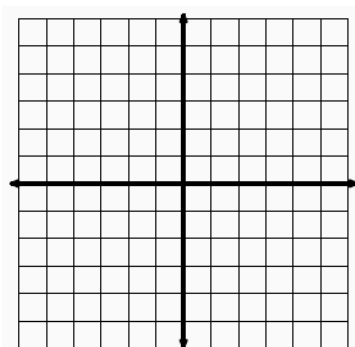## GO
Topic: Graphing linear inequalities

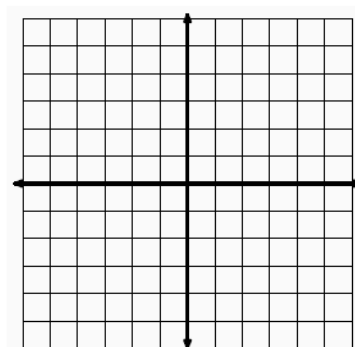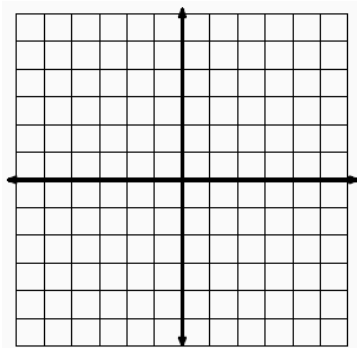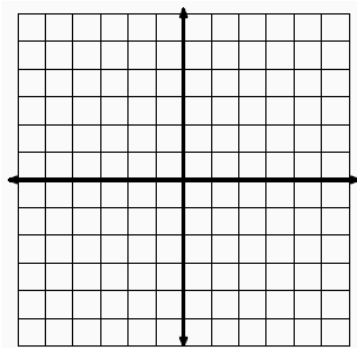16. $y \leq 3x - 4$ 17. $y \leq -2x + 3$ 18. $y > 4x - 3$

19. $3x + 4y < 12$

20. $6x + 8y \leq 24$

21. $5x + 3y \leq 15$