

Solving and Graphing Two-Variable Inequalities

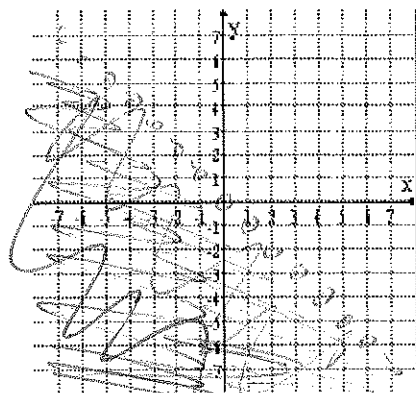
Extra Practice/Homework

Name: _____

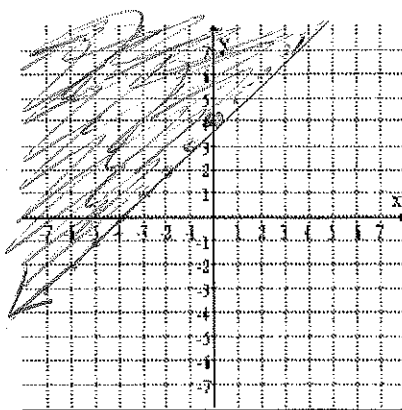
Date: _____ Period: _____

I. Graph each inequality.

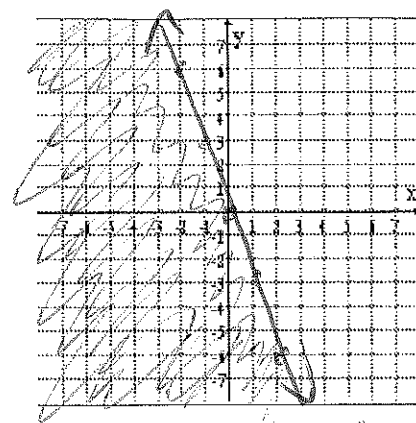
1. $-x > y$ $y < -x$
 $m = \underline{-1}$ $b = \underline{0}$
 line: dotted shade: below



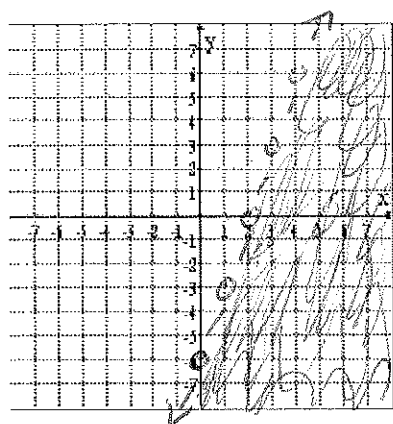
2. $x+4 \leq y$ $y \geq x+4$
 $m = \underline{1}$ $b = \underline{4}$
 line: solid shade: above



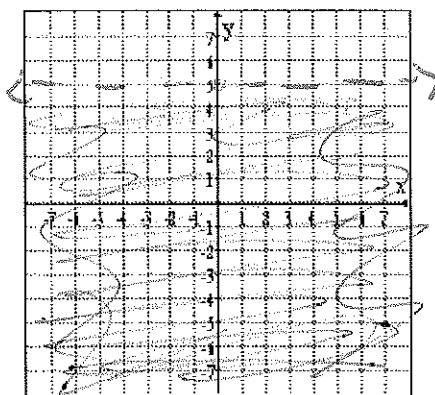
3. $3x+y \leq 0$ $y \leq -3x$
 $m = \underline{-3}$ $b = \underline{0}$
 line: solid shade: below



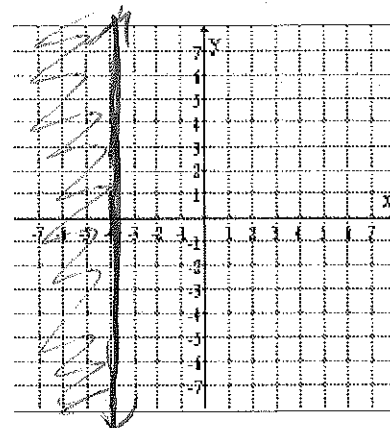
4. $3x-y > 6$ $y < 3x-6$
 $m = \underline{3}$ $b = \underline{-6}$
 line: dotted shade: below



5. $y < 5$ Horizontal
 $m = \underline{0}$ $b = \underline{5}$
 line: dotted shade: below



6. $x \leq -4$ Vertical
 $m = \underline{\text{undef}}$ $b = \underline{\text{DNE}}$
 line: solid shade: below



II. Write an inequality. Name 3 possible solutions for each scenario.

7. Eric loves peanut butter and jelly, sometimes together and sometimes separate. Peanut butter has 200 calories per serving, and grape jelly has 50 calories per serving. How many servings of each can Eric have if he keeps his total calorie intake from these two foods under 1000?

Peanut Butter: x
 Grape Jelly: y
 $200x + 50y < 1000$
 Possible solutions: $(4, 1)$ $(2, 6)$ $(3, 3)$

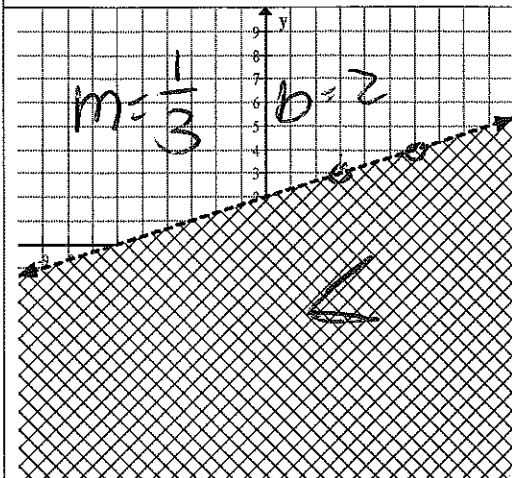
8. My veterinarian charges \$20 for a check-up and the appropriate shots for each dog she sees. She charges \$25 for similar work for each cat. How many dogs and cats should she schedule if she needs her income to be at least \$350 from these appointments?

dog: x
 cat: y
 $20x + 25y \geq 350$
 Possible solutions: $(10, 14)$ $(5, 10)$ $(15, 3)$

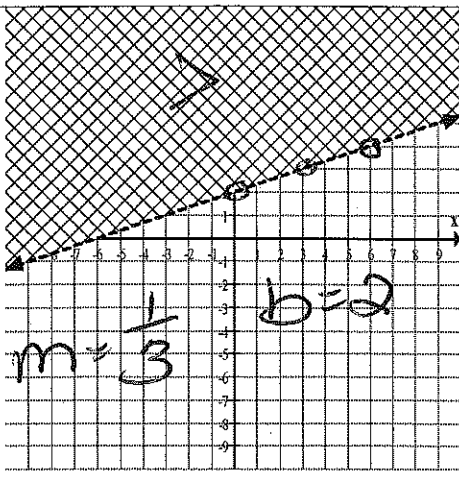
$$y \square mx + b$$

III. State the inequality graphed below.

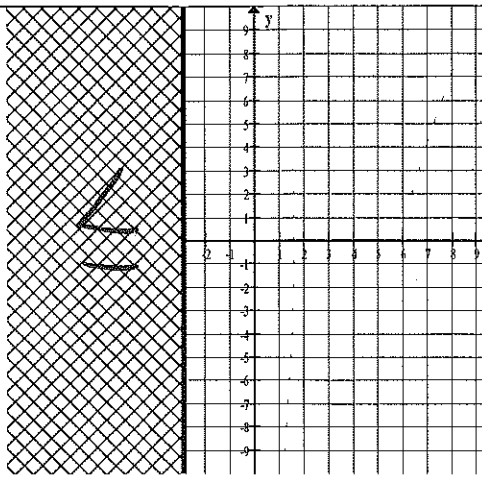
9. $y < \frac{1}{3}x + 2$



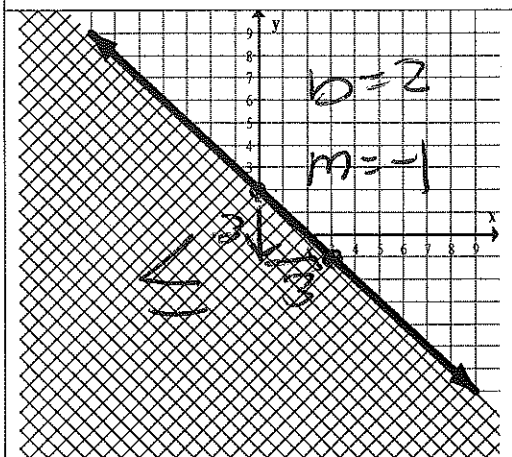
10. $y > \frac{1}{3}x + 2$



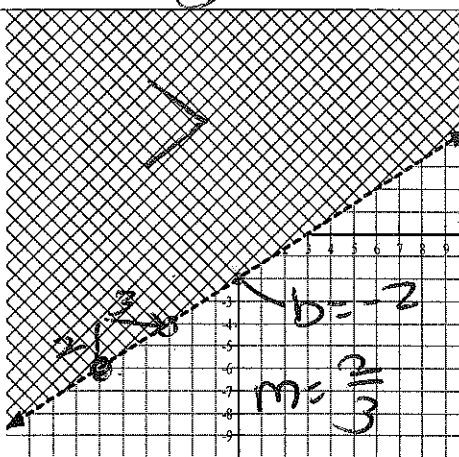
11. $x \leq -3$



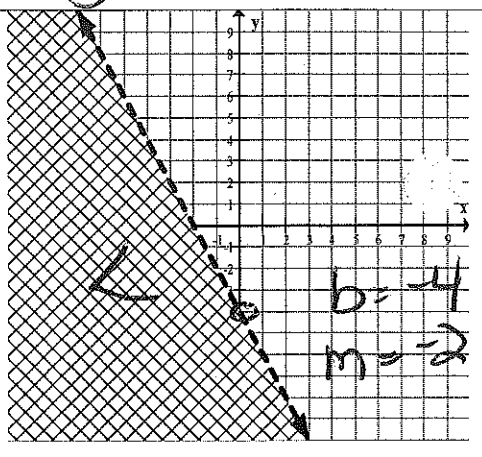
12. $y \leq -x + 2$



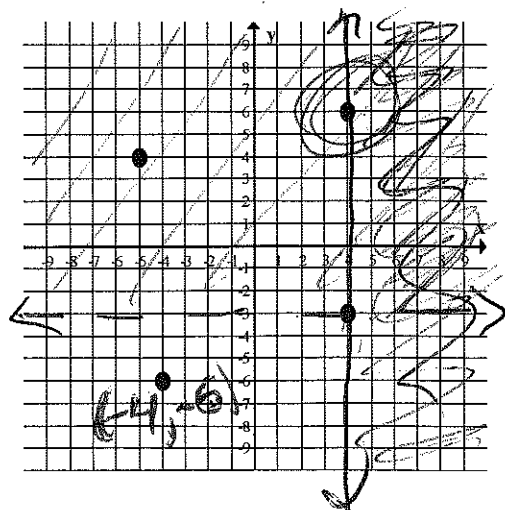
13. $y > \frac{2}{3}x - 2$



14. $y < -2x - 4$



15. Which of the following ordered pairs is in the solution set of $x \geq 4$ and $y > -3$?



~~(-4, -6)~~
~~(4, 6)~~
~~(4, -6)~~
~~(-4, 6)~~

$(4, 6)$

must be true
 for both
 → In the double
 shaded area