

**REVIEW**

**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- A 1. Make an input-output table for the function  $y = 2x + 4$ . Use  $x$ -values of 1, 2, 3, 4, and 5.

a. 

|             |   |   |    |    |    |
|-------------|---|---|----|----|----|
| Input, $x$  | 1 | 2 | 3  | 4  | 5  |
| Output, $y$ | 6 | 8 | 10 | 12 | 14 |

  
*Handwritten: 2 2 2 2*

c. 

|             |   |    |    |    |     |
|-------------|---|----|----|----|-----|
| Input, $x$  | 1 | 2  | 3  | 4  | 5   |
| Output, $y$ | 6 | 16 | 36 | 76 | 156 |

b. 

|             |   |   |   |    |    |
|-------------|---|---|---|----|----|
| Input, $x$  | 1 | 2 | 3 | 4  | 5  |
| Output, $y$ | 5 | 7 | 9 | 11 | 13 |

d. 

|             |   |   |   |   |   |
|-------------|---|---|---|---|---|
| Input, $x$  | 1 | 2 | 3 | 4 | 5 |
| Output, $y$ | 5 | 6 | 7 | 8 | 9 |

- C 2. Which equation corresponds to the values in the table below?

|             |    |    |    |    |    |
|-------------|----|----|----|----|----|
| Input, $x$  | 1  | 2  | 3  | 4  | 5  |
| Output, $y$ | 17 | 26 | 35 | 44 | 53 |

  
*Handwritten: 9 9 9 9*

a.  $y = 8x + 9$

b.  $y = 9x + 7$

c.  $y = 9x + 8$

d.  $y = 10x + 8$

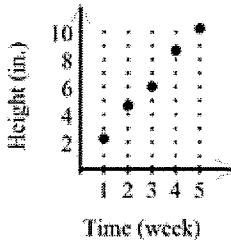
A

3. The table below shows the height of a plant over time.

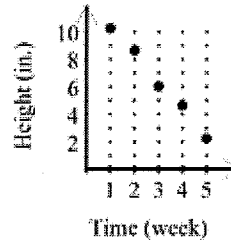
| Bamboo Height |        |
|---------------|--------|
| Time (Week)   | Height |
| 1             | 2.25   |
| 2             | 4.63   |
| 3             | 6.00   |
| 4             | 8.63   |
| 5             | 10.25  |

Find the scatter plot that shows the relationship between time and the height of the plant.

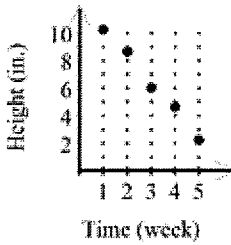
a. The height of the plant increases over time.



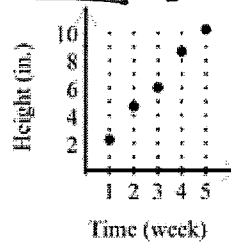
c. The height of the plant increases over time.



b. The height of the plant decreases over time.



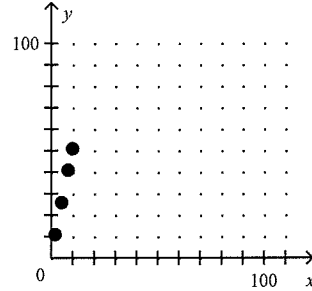
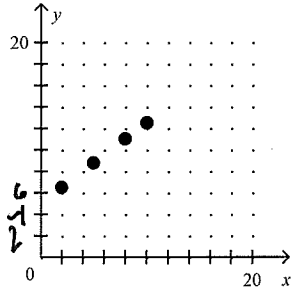
d. The height of the plant decreases over time.



4. Employees earn \$5 per hour plus \$0.75 for every unit they produce per hour. Which of the following shows both an equation in which  $y$  represents the employee's wages for producing  $x$  units per hour, and the graph of the wages earned for producing 2, 5, 8, and 10 units per hour?

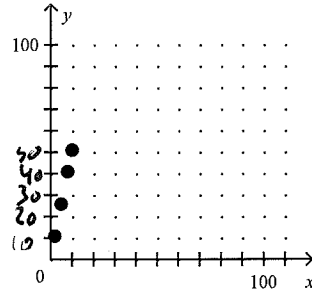
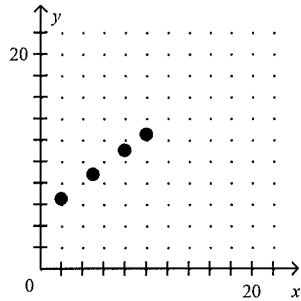
a.  $y = 5 + 0.75x$

c.  $y = 5x + 0.75$



b.  $y = 5x + 0.75$

d.  $y = 5 + 0.75x$



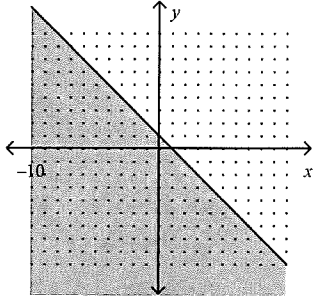
**Graph.**

C

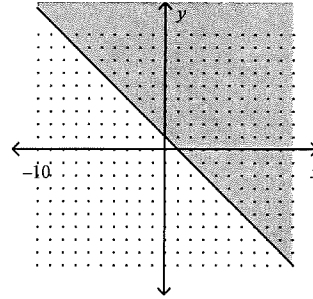
5.  $y \geq -x + 1$

$0 \geq 1$

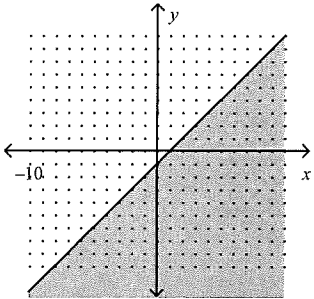
a.



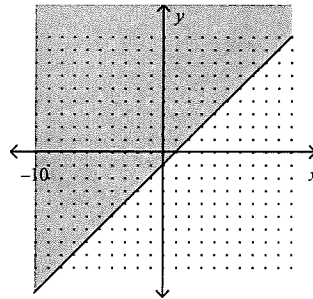
c.



b.



d.

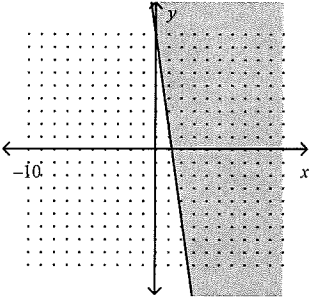


D

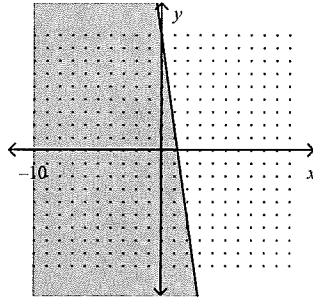
6.  $y \leq 7x - 9$

$0 \leq -9$

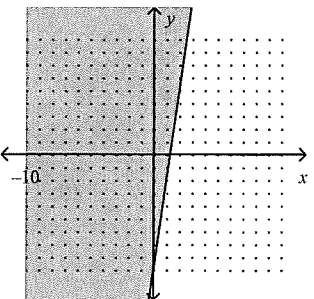
a.



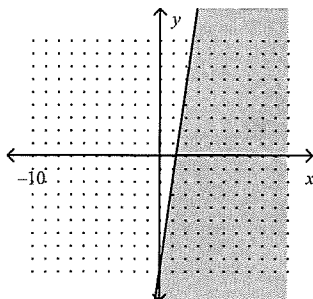
c.



b.



d.

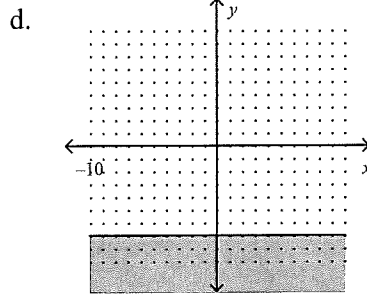
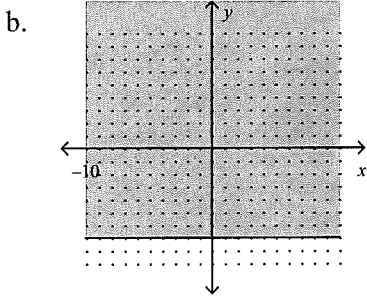
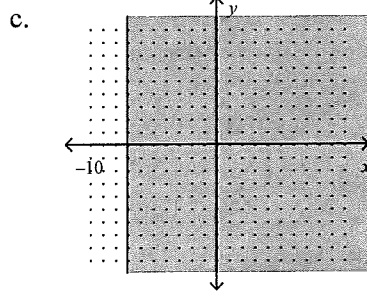
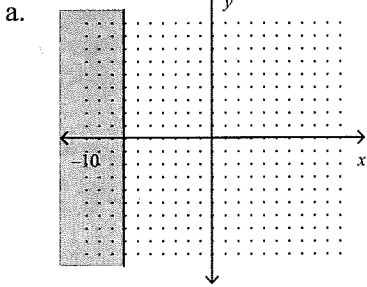


Name: \_\_\_\_\_

ID: A

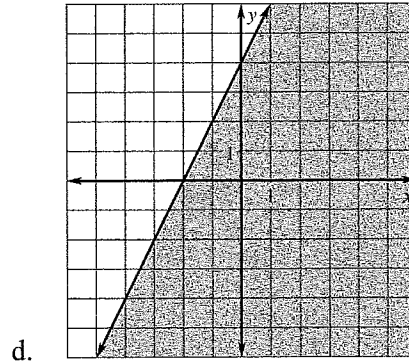
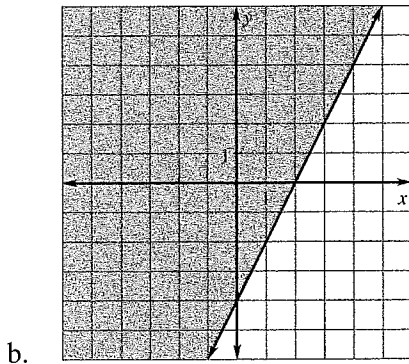
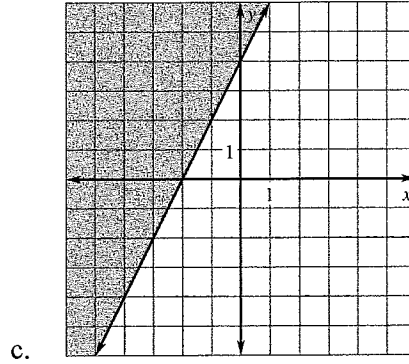
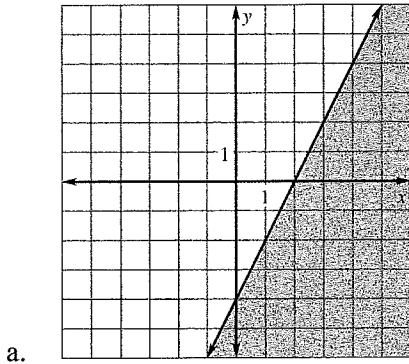
A 7.  $x \leq -7$

$(0,0)$   
 $0 \leq -7$   
False



D 8. Graph:  $y \leq 2x + 4$

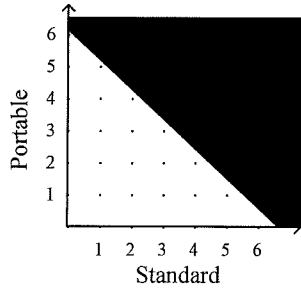
$(0,0)$   
 $0 \leq 4$   
True



A

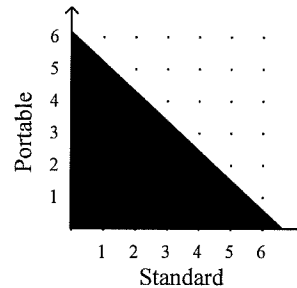
9. An electronics store makes a profit of \$61 for every standard CD player sold and \$66 for every portable CD player sold. The manager's target is to make at least \$405 a day on sales from standard and portable CD players. Write an inequality that represents the numbers of both kinds of CD players that can be sold to reach or beat the sales target. Let  $s$  represent the number of standard CD players sold and  $p$  represent the number of portable CD players sold. Then graph the inequality.

a.  $61s + 66p \geq 405$

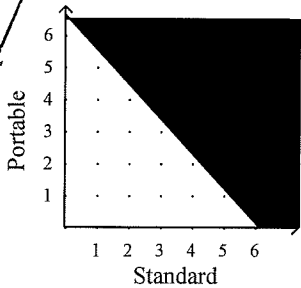


c.  $61s + 66p \leq 405$

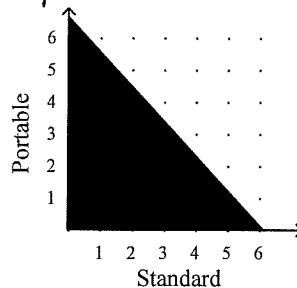
*S = Standard  
P = portable*



b.  ~~$66s + 61p \geq 405$~~



d.  ~~$66s + 61p \leq 405$~~



**Short Answer**

1. Does the following data represent wind speed as a function of lift?

|                   |     |    |    |    |
|-------------------|-----|----|----|----|
| wind speed (mi/h) | 10  | 20 | 30 | 40 |
| lift (ft/s)       | 4.6 | 22 | 40 | 32 |

*yes!*

2. Which of the functions represents the input-output table?

| Input | Output |
|-------|--------|
| 0     | 3      |
| 1     | 5      |
| 2     | 7      |
| 3     | 9      |

| Functions                          |
|------------------------------------|
| <del><math>y = 2x - 3</math></del> |
| $y = 2x + 3$                       |
| <del><math>y = 2x - 4</math></del> |
| $y = 3x + 3$                       |

$y = 2x + 3$

Write a function rule for the input-output table.

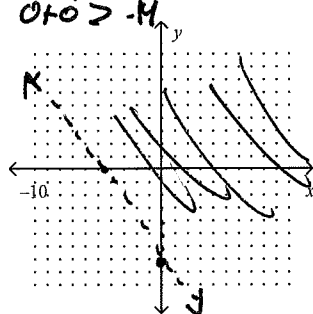
3.

|          |    |    |    |    |
|----------|----|----|----|----|
| Input x  | 2  | 3  | 4  | 5  |
| Output y | 10 | 15 | 20 | 25 |

$y = 5x$

Graph.

4.  $3x + 2y > -14$



$-\frac{14}{3} = -4.6$

5. Is the ordered pair  $(-3, 7)$  a solution of the inequality  $5x - 4y < -20$ ?

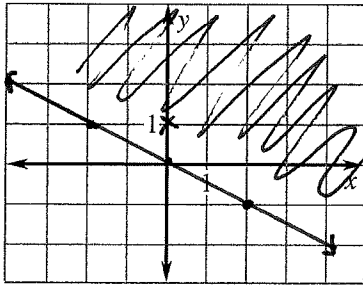
$5(-3) - 4(7) < -20$

$-15 - 28 < -20$

$-43 < -20$

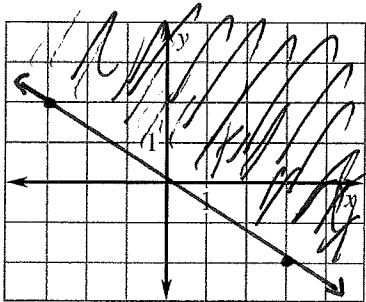
Yes!

6. Graph  $y \geq -\frac{1}{2}x$ .



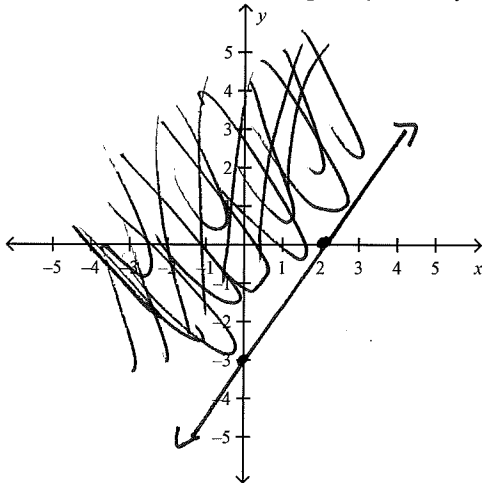
$(0,1)$   
 $1 \geq 0$

7. Graph  $y \geq -\frac{2}{3}x$ .



$(0,1)$   
 $1 \geq 0$

8. Sketch a graph of the inequality  $3x - 2y \leq 6$ .

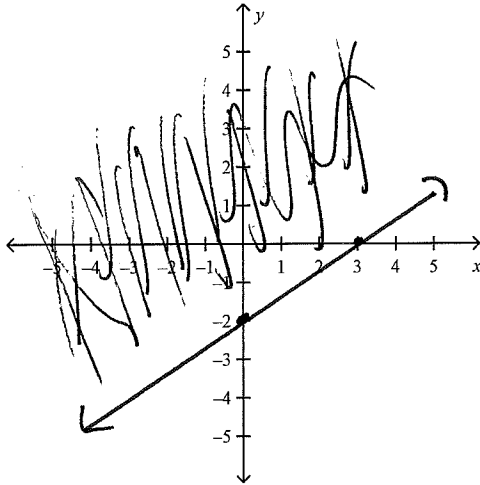


$0 - 2y \leq 6$        $\frac{3x}{3} = \frac{6}{3}$   
 $y = -3$                $x = 2$

$(0,0)$   
 $3(0) - 2(0) \leq 6$   
 $0 \leq 6$



9. Sketch a graph of the inequality  $2x - 3y \leq 6$ .



$$2(0) - 3y \leq 6$$

$$-3y = 6$$

$$y = -2$$

$$2x - 3(0) = 6$$

$$\frac{2x}{2} = \frac{6}{2}$$

$$x = 3$$

$$(0, 0)$$

$$2(0) - 3(0) \leq 6$$

$$0 \leq 6$$

10. A wholesaler has \$75,000 to spend on certain models of TV sets and VCRs. If the TV sets may be obtained at \$375 each and the VCRs at \$215 each, write an inequality that describes the possible numbers of TVs and VCRs the wholesaler can purchase.

TVS =  $x$   
VCR =  $y$

$$375x + 215y \leq 75,000$$

11. Write an equation of a line with slope 7 passing through the point  $(-1, 3)$ .

$$3 = 7(-1) + b$$

$$3 = -7 + b$$

$$b = 10$$

$$y = 7x + 10$$

$$y - 3 = 7(x + 1)$$

12. Find the y-intercept of a line that passes through  $(-6, -1)$  and has a slope of  $\frac{5}{7}$ .

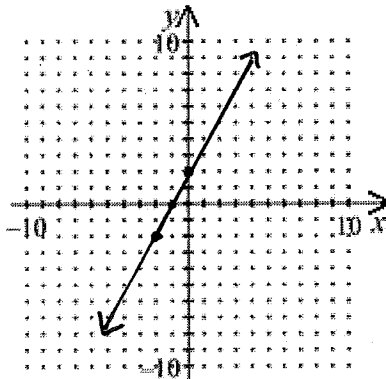
$$-1 = \frac{5}{7}(-6) + b$$

$$-1 = \frac{-30}{7} + b$$

$$-\frac{7}{7} + \frac{30}{7} = b$$

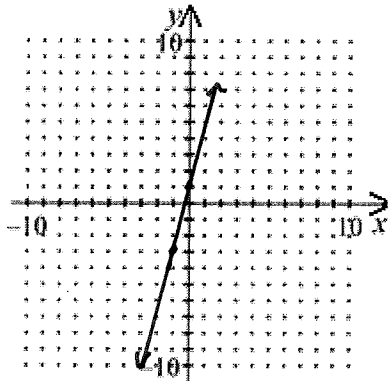
$$b = \frac{23}{7}$$

13. A line passes through the point  $(-2, -2)$  and has a slope of 2. Sketch the line and write its equation in slope-intercept form.



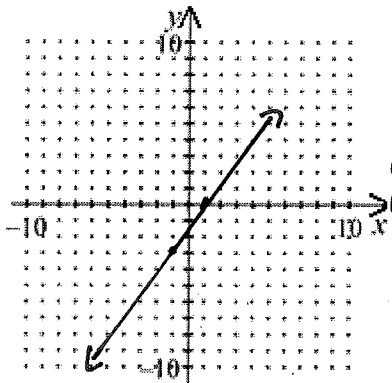
$$y = 2x + 2$$

14. A line passes through the point  $(-1, -3)$  and has a slope of 4. Sketch the line and write its equation in slope-intercept form.



$$y = 4x + 1$$

15. A line passes through the point  $(-1, -3)$  and has a slope of  $\frac{3}{2}$ . Sketch the line and write its equation in slope-intercept form.



$$\frac{-3 - 0}{-1 - 1} = -\frac{3}{2}$$

$$0 = 1\left(\frac{3}{2}\right) + b$$

$$0 = \frac{3}{2} + b$$

$$-\frac{3}{2} - \frac{3}{2} = b$$

$$b = -\frac{3}{2}$$

$$y = \frac{3}{2}x - \frac{3}{2}$$

16. Write an equation for the line containing  $(6, 39)$  and  $(4, 27)$ .

$$\frac{39 - 27}{6 - 4} = \frac{12}{2} = 6 \quad m = 6$$

$$39 = 6(6) + b \quad 39 = 36 + b$$

$$39 = 36 + b \quad 3 = b$$

$$y = 6x + 3$$

17. Write the equation in slope-intercept form of the line that passes through the points  $(-3, 5)$  and  $(2, -5)$ .

$$\frac{-5 - 5}{2 - (-3)} = \frac{-10}{5} = -2$$

$$5 = -2(-3) + b \quad 5 = 6 + b$$

$$5 = 6 + b \quad -6 - 6 = -1 = b$$

$$y = -2x - 1$$

18. An editor gets a \$2890 raise each year. In her third year, she is making \$47,700 per year. Write an equation that gives her income as a function of how many years she has worked at the company.

$$47,700 - 2890(3) = 39030 \quad y = 2890x + 39030$$

19. A grocer knows that if he sells his canned hams for \$8 each, he can sell 950 per month, and if he sells the same hams for \$10, he will sell 900 per month. Assuming the relationship between price and sales is linear, write an equation you could use to predict sales for other prices.

$$\frac{(8, 950) \quad (10, 900)}{950 - 900}{8 - 10} = \frac{50}{-2} = -25$$

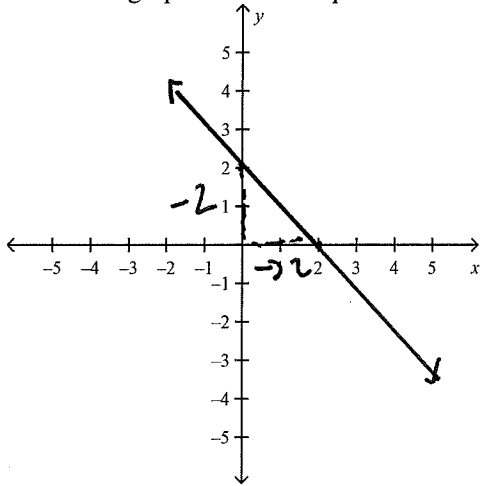
$$900 = -25(10) + b$$

$$900 = -250 + b$$

$$1150 = b$$

$$y = -25x + 1150$$

20. Given the graph write the equation.



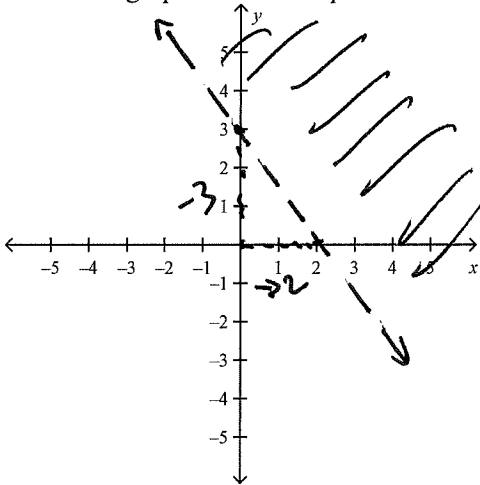
$$\frac{-2}{2} = -1$$

$$m = -1$$

$$b = 2$$

$$y = -x + 2$$

21. Given the graph write the equation.



$$b = 3$$

$$m = -\frac{3}{2}$$

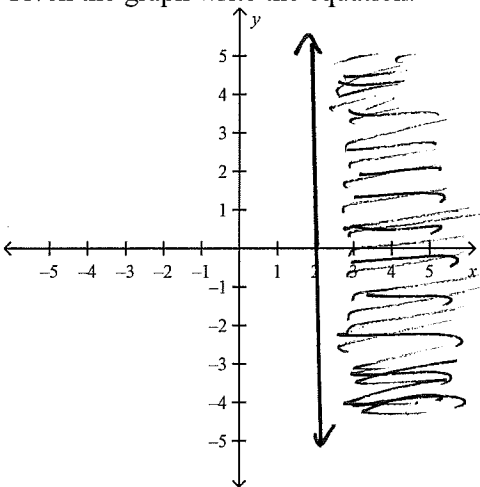
$$y = -\frac{3}{2}x + 3$$

$$y < -\frac{3}{2}x + 3$$

If I plug in (zero, zero), I am looking for false. If it is false my sign is correct. If it true my sign is incorrect  
 $0 < 3$ . True. I need to flip my sign

$$y > -\frac{3}{2}x + 3$$

22. Given the graph write the equation.



$$x = 2$$

$$x > 2$$

