

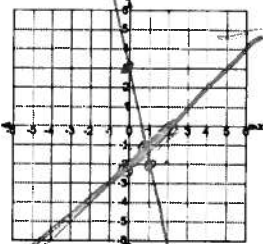
## Chapter 6B-7A Practice Test

## Short Answer

Tell whether the system has *no solution*, *one solution*, or *infinitely many solutions*. You may use the coordinate grid if you wish.

1.  $y = -5x + 3$

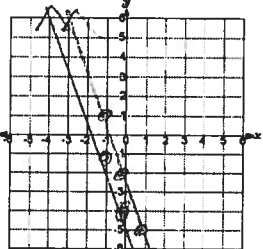
$y = x - 2$



One solution

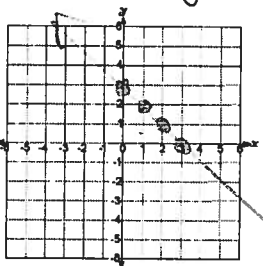
2.  $y = -3x - 4$

$y = -3x - 2$

No solutions - parallel lines  
(same slope, diff. y-int)

3.  $y = -x + 3$

$y - 3 = -x$

 $y = -x + 3$   
Infinitely many solutions  
Same line

4. Is
- $(5, -2)$
- a solution of the linear inequality?

$y \geq 4x - 5$

$-2 \geq 4(5) - 5$   
 $-2 \geq 20 - 5$

$-2 \geq 15$  F

(NO)

Is  $(-3, 1)$  a solution of the system of linear inequalities?

5.  $y < 3x + 12$

$y \geq 5x + 7$

$1 < 3(-3) + 12$

$1 < -9 + 12$

$1 < 3$

T

$1 \geq 5(-3) + 7$

$1 \geq -15 + 7$

$1 \geq -8$

T 1

(Yes)

6. Write the following inequality in slope-intercept form.

$-14x - 2y \geq -26$

$$\frac{-2y}{-2} \geq \frac{-14x - 26}{-2}$$

$$y \leq -7x + 13$$

7. The grocery store sells apples for \$5.00 a pound and bananas for \$3.50 a pound. Write an equation in standard form for the weights of apples  $a$  and bananas  $b$  that a customer could buy with \$20.

$5.00a + 3.50b = 20$

8. At the beginning of the year, you have a balance of \$200 in your bank account. Each month you deposit \$50.

(a) Write an equation for this situation.

$y = 50x + 200$

(b) Use the equation to find the balance in September.

$x = 9 \text{ months}$   
 $y = 50(9) + 200$   
 $y = 450 + 200$   
 $y = 650$

Are the graphs of the lines in the pair parallel? Show work to back up your answer.

9.  $y = x - 19$   
 $-2x + 2y = -3$

Circle your answer: **YES** NO

$\frac{2y}{2} = \frac{2x - 3}{2}$   
 $y = x - 1.5$

same slope, diff. y-int

Write the equation of a line in slope-intercept form that is perpendicular to the given line and that passes through the given point.

10.  $y = \frac{3}{5}x + 5$ ;  $(9, -4)$

$m_{\perp} = -\frac{5}{3}$

$y + 4 = -\frac{5}{3}(x - 9)$   
 $y + 4 = -\frac{5}{3}x + \frac{45}{3}$   
 $y + 4 = -\frac{5}{3}x + 15$   
 $y = -\frac{5}{3}x + 11$

11.  $3x + 12y = -3$ ;  $(6, 3)$

$\frac{3x}{3} + \frac{12y}{12} = \frac{-3}{12}$   
 $x + y = -\frac{1}{4}$

$y = -\frac{1}{4}x - \frac{1}{4}$

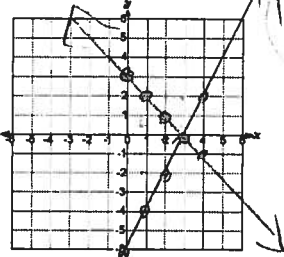
$m_{\perp} = 4$

$y - 3 = 4(x - 6)$   
 $y - 3 = 4x - 24$   
 $y = 4x - 21$

12. Solve the below system of linear equations by graphing.

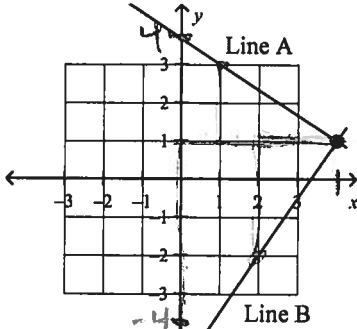
$$y = -x + 3$$

$$y = 2x - 6$$



$(3, 0)$

13. Assume that the two lines are perpendicular.



- a. Find a point-slope equation for line A.

$(4, 1)$   
 $m = -\frac{2}{3}$

$y - y_1 = m(x - x_1)$   
 $y - 1 = -\frac{2}{3}(x - 4)$

- b. Find a slope-intercept equation for line B.

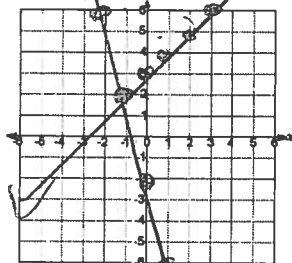
$b = -5$   
 $m = \frac{6}{4} = \frac{3}{2}$

$y = mx + b$   
 $y = \frac{3}{2}x - 5$

14. Solve the below system of linear equations by graphing.

$$-x + y = 3$$

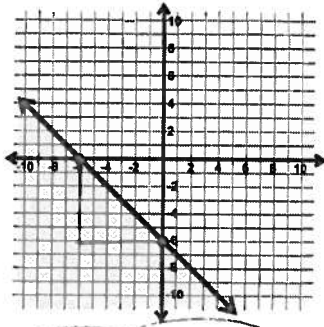
$$4x + y = -2$$



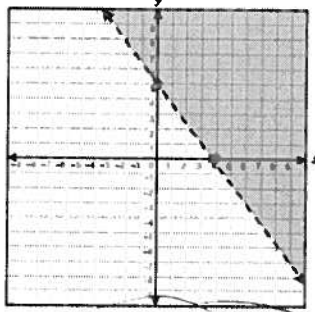
$y = x + 3$   
 $y = -4x - 2$

Solution:  $(-1, 2)$

15. Write the inequalities from the graph below.

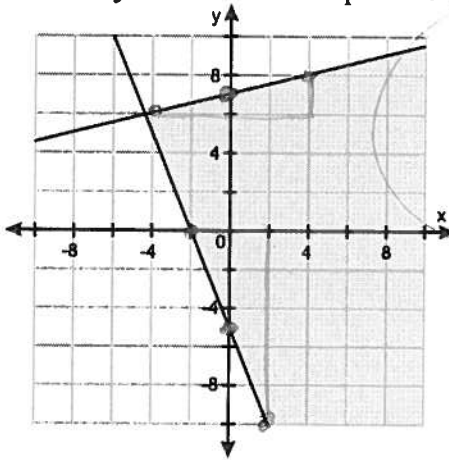


$$y < -x - 6$$



$$y > \frac{-5}{4}x + 5$$

16. Write a system of linear inequalities for the graph below. (NOTE: the graph counts by 2's).



$$y \leq \frac{1}{4}x + 6$$

$$y \geq -\frac{5}{2}x - 5$$

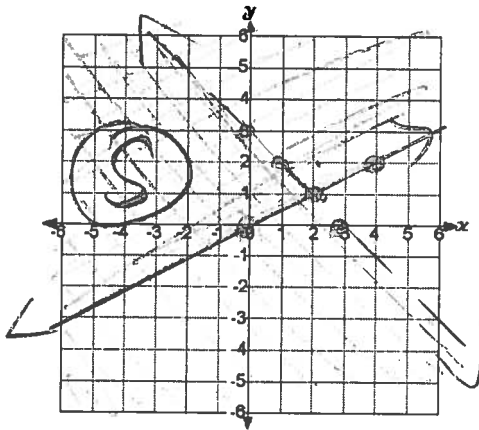
$$m = \frac{+2}{8} = \frac{1}{4}$$

$$m = \frac{-10}{4} = -\frac{5}{2}$$

17. Solve the following system of inequalities by graphing.

$$x + y < 3$$

$$-2x + 4y \geq 0$$



$$y < -x + 3$$

$$\frac{4y}{4} \geq \frac{2x+0}{4}$$

$$y \geq \frac{1}{2}x + 0$$