

## Chapter 7 Practice Test

### Multiple Choice

- A. 1. By what number should you multiply the first equation to solve using elimination?  
 $-2x - 2y = 0$  and  $-8x + 3y = 44$

a. ~~2~~ -4

b. 4

c. -8

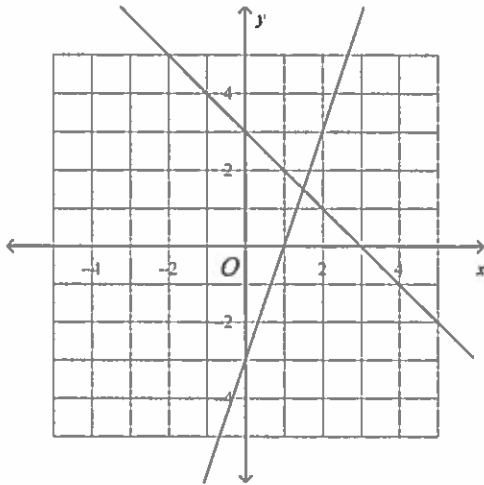
d. -2

- D. 2. Which graph represents the following system of equations?

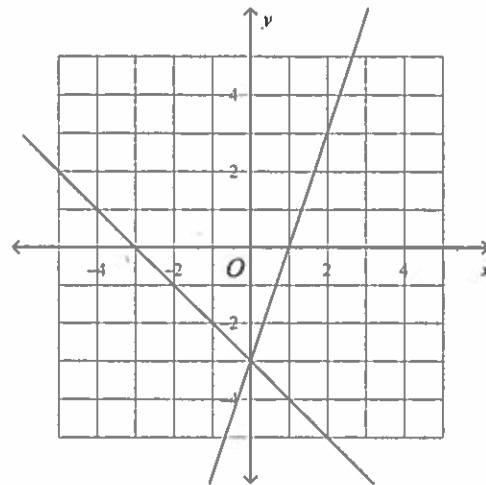
$$y = 3x + 3$$

$$y = -x - 3$$

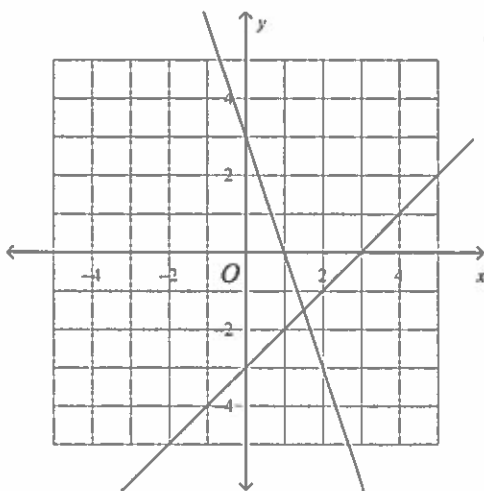
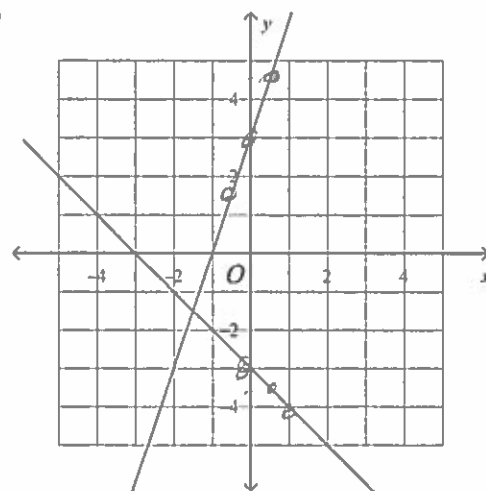
a.



c.



b.

d.

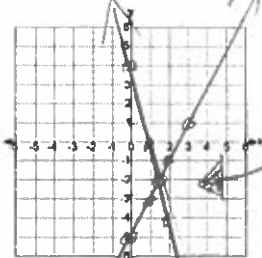
### Short Answer

3. Is  $(5, -2)$  a solution of the linear inequality?  
 $y \geq 4x - 5$

$$\begin{aligned} -2 &\stackrel{x=5}{\geq} 4(5) - 5 \\ -2 &\geq 20 - 5 \\ -2 &\geq 15 \quad \text{False} \\ &\text{(NO)} \end{aligned}$$

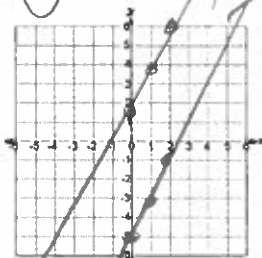
Tell whether the system has *no solution*, *one solution*, or *infinitely many solutions*. You may use the coordinate grid if you wish.

4.  $y = -4x + 4$   
 $y = 2x - 5$



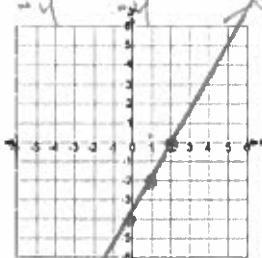
One solution - cross in a point  
 diff. slopes + y-intercepts

5.  $y = 2x + 2$   
 $y = 2x - 5$



No solutions - parallel lines  
 Same slope, different y-int.

6.  $y = 2x - 4$   
 $y + 4 = 2x$



$y = 2x - 4$   
 $y = 2x - 4$

Infinitely many solutions  
 Same line - they lie on top of each other

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

$5x - 5y \geq 70$

~~$-5x$~~   ~~$-5x$~~

$\frac{5y}{-5} \geq \frac{-5x + 70}{-5}$

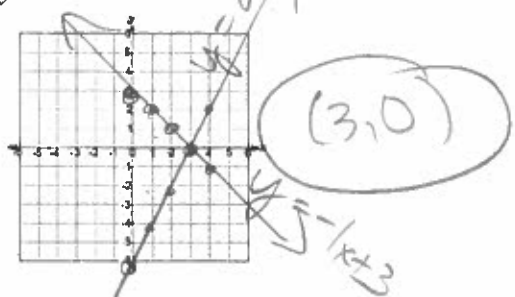
$y \leq 1x - 14$

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

$y = -x + 3$

$y = 2x - 6$

Solution: (3, 0)

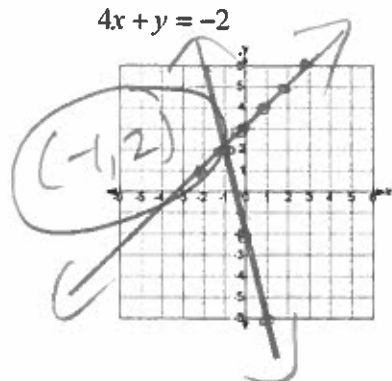


9. Solve the below system of linear equations by graphing.

$-x + y = 3$

$4x + y = -2$

Solution: (-1, 2)

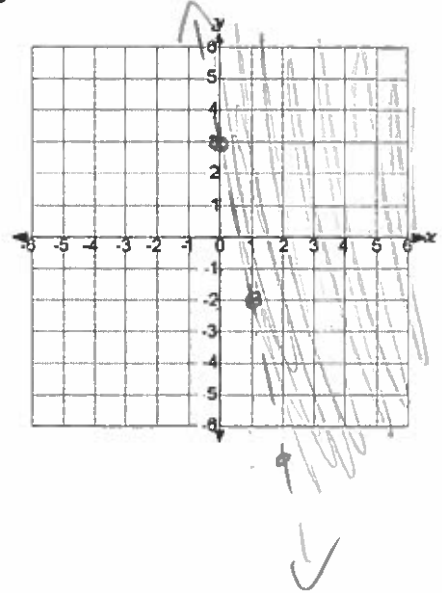


$$\begin{array}{r} -x + y = 3 \\ +x \quad +x \\ \hline y = 1x + 3 \end{array}$$

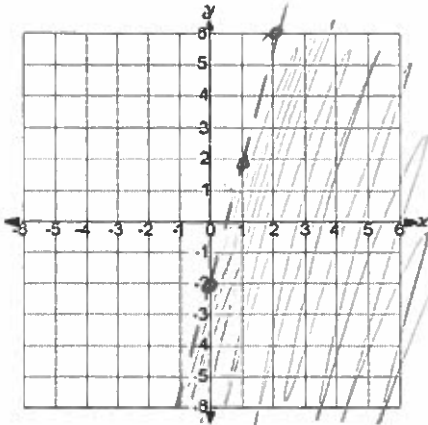
$$\begin{array}{r} 4x + y = -2 \\ -4x \quad -4x \\ \hline y = -4x - 2 \end{array}$$

Graph the inequality.

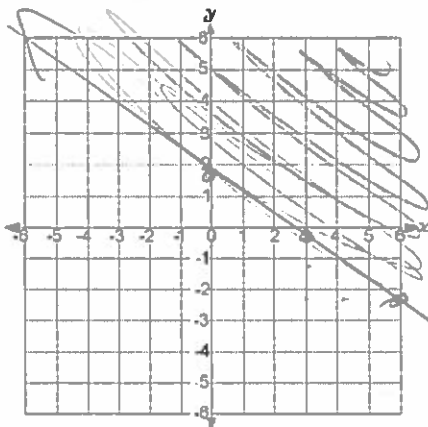
10.  $y > -5x + 3$



11.  $y < 4x - 2$



12.  $4x + 6y \geq 10$



$$\begin{array}{r} 4x + 6y \geq 10 \\ -4x \quad -4x \\ \hline \end{array}$$

$$\frac{6y \geq -4x + 10}{6} \quad \frac{-4x}{6} \quad \frac{10}{6}$$

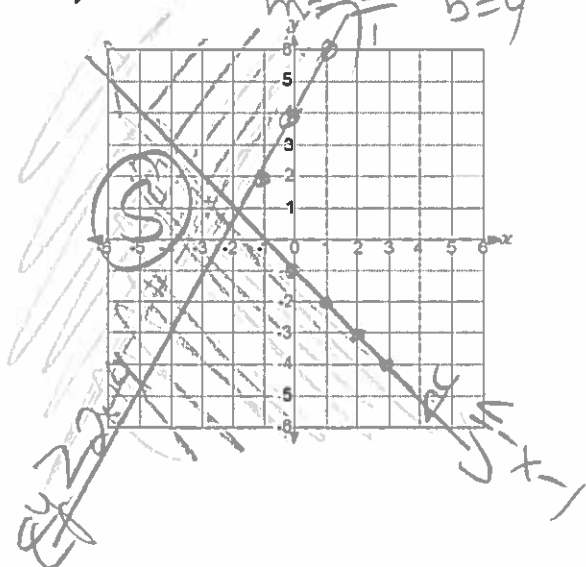
$$y \geq -\frac{2}{3}x + \frac{5}{3}$$

Solve the system of linear inequalities by graphing.

13.  $y \leq -x - 1$   
 $y \geq 2x + 4$

$m = -1$   $b = -1$

$m = +2$   $b = 4$



Solve the system of equations using substitution.

14.  $y = 2x + 3$   
 $y = 3x + 1$

$\cancel{2x} + 3 = \cancel{3x} + 1$   
 $-2x \quad -2x$   


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 $3 = 1x + 1$   
 $-1 \quad -1$   
 $2 = x$

$y = 2(2) + 3$   
 $= 4 + 3$   
 $y = 7$

**(2, 7)**

15.  $y = 2x - 10$   
 $y = 4x - 8$

$\cancel{2x} - 10 = \cancel{4x} - 8$   
 $-2x \quad -2x$   


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 $-10 = 2x - 8$   
 $+8 \quad +8$   
 $-2 = 2x$   
 $\frac{-2}{2} = \frac{2x}{2}$   
 $x = -1$

$y = 2(-1) - 10$   
 $= -2 - 10$   
 $y = -12$

**(-1, -12)**

16.  $3x + 2y = 7$   
 $y = -3x + 11$

$x = -1$

$3x + 2(-3x + 11) = 7$   
 $3x - 6x + 22 = 7$   
 $-3x + 22 = 7$   
 $-22 \quad -22$   


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 $-3x = -15$   
 $x = 5$

$y = -3(5) + 11$   
 $= -15 + 11$   
 $y = -4$

**(5, -4)**

Solve the system using elimination.

17.  $3x + 3y = -9$   
 $3x - 3y = 21$

$6x = 12$   
 $x = 2$

$3(2) + 3y = -9$   
 $6 + 3y = -9$   
 $-6 \quad -6$   


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 $3y = -15$   
 $y = -5$

**(2, -5)**

18.  $x + 2y = -6$   
 $3x + 8y = -20$

$\cancel{-3x} - 6y = 18$   
 $3x + 8y = -20$   


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 $2y = -2$   
 $y = -1$

$x + 2(-1) = -6$   
 $x - 2 = -6$   
 $+2 \quad +2$   


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 $x = -4$

$10x - 4y = -4$   
 $x + 2y = -6$   
 $3x + 8y = -20$   
 $\rightarrow -4x - 8y = 24$   
 $3x + 8y = -20$   


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 $-1x = 4$   
 $x = -4$

$-4 + 2y = -6$   
 $+4 \quad +4$   


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

**(-4, -1)**

19.  $10x - 3y = -18$   
 $7x - 8y = 11$

$\cancel{-70x} - 21y = -126$   
 $\cancel{70x} + 80y = -110$   


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 $59y = -236$   
 $y = -4$

$-10x - 3(-4) = -18$   
 $-10x + 12 = -18$   
 $-12 \quad -12$   


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 $-10x = -30$   
 $\frac{-10x}{-10} = \frac{-30}{-10}$   
 $x = 3$

$5 \quad 3$   
 $10x - 3y = -18$   
 $\quad \quad \quad (-3) \quad \quad (-3)$   
 $7x - 8y = 11$   
 $\rightarrow$   
 $5 \quad 10(3) - 3y = -18$   
 $-30 - 3y = -18$   
 $+30 \quad +30$   


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 $-3y = 12 \quad (y = -4)$

$-80x - 24y = -144$   
 $21x + 24y = -33$   


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 $-59x = -177$   
 $x = 3$

**(3, -4)**