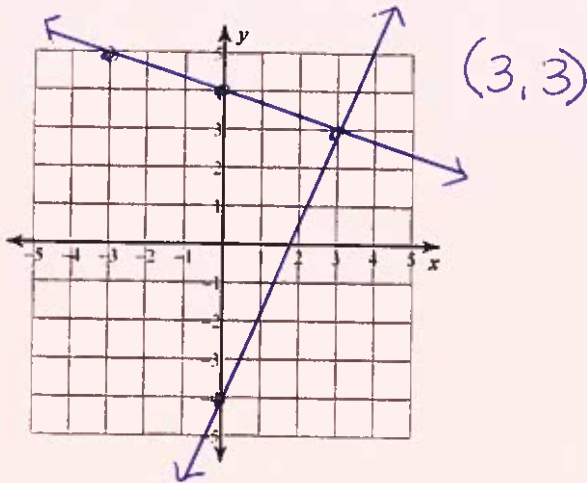


Unit 3 Review

Solve each system by graphing.

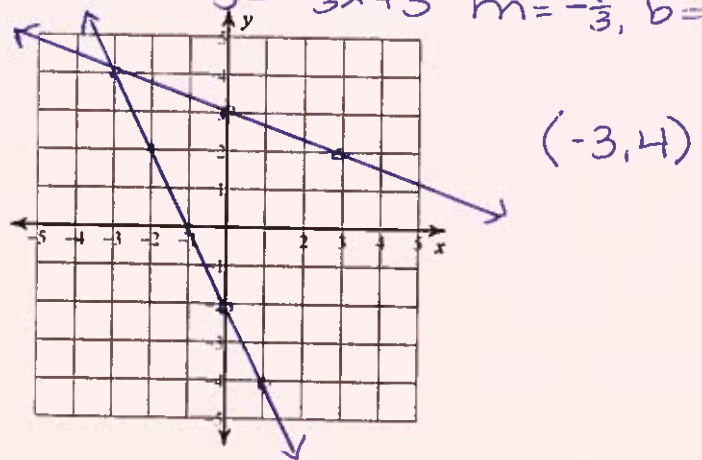
1)  $y = \frac{7}{3}x - 4$   $m = \frac{7}{3}, b = -4$

$y = -\frac{1}{3}x + 4$   $m = -\frac{1}{3}, b = 4$



2)  $2x + y = -2$   $y = -2x - 2$   $m = -2, b = -2$

$x + 3y = 9$   $y = -\frac{1}{3}x + 3$   $m = -\frac{1}{3}, b = 3$



Solve each system by substitution.

3)  $7x - y = 14$   
 $y = 7$   
 $7x - 7 = 14$   
 $7x = 21$   
 $x = 3$   
 Solution:  $(3, 7)$

4)  $-5x - 3y = -21$   
 $x + 6y = 15$   
 $x = 15 - 6y$   
 $x = 15 - 6(2)$   
 $x = 15 - 12$   
 $x = 3$   
 Solution:  $(3, 2)$

$-5(15 - 6y) - 3y = -21$   
 $-75 + 30y - 3y = -21$   
 $-75 + 27y = -21$   
 $+75$   $+75$   
 $27y = 54$   
 $\frac{27y}{27} = \frac{54}{27}$   
 $y = 2$

Solve each system by elimination.

5)  $9x + 10y = -20$   
 $9x - 7y = 14$   
 $\frac{3y = -6}{3} = \frac{-6}{3}$   
 $y = -2$   
 $9x - 7(-2) = 14$   
 $9x + 14 = 14$   
 $-14 -14$   
 $\frac{9x = 0}{9} = \frac{0}{9}$   
 $x = 0$   
 Solution:  $(0, -2)$

6)  $2x - 3y = -20$   
 $3(-5x + y = 11)$   
 $-15x + 3y = 33$   
 $2x - 3y = -20$   
 $-13x = 13$   
 $\frac{-13x = 13}{-13} = \frac{13}{-13}$   
 $x = -1$   
 $2(-1) - 3y = -20$   
 $-2 - 3y = -20$   
 $+2$   $+2$   
 $-3y = -18$   
 $\frac{-3y = -18}{-3} = \frac{-18}{-3}$   
 $y = 6$   
 Solution:  $(-1, 6)$

7) Rob and Abhasra are selling pies for a school fundraiser. Customers can buy apple pies and blackberry pies. Rob sold 10 apple pies and 9 blackberry pies for a total of \$250. Abhasra sold 5 apple pies and 3 blackberry pies for a total of \$95. Find the cost each of one apple pie and one blackberry pie.

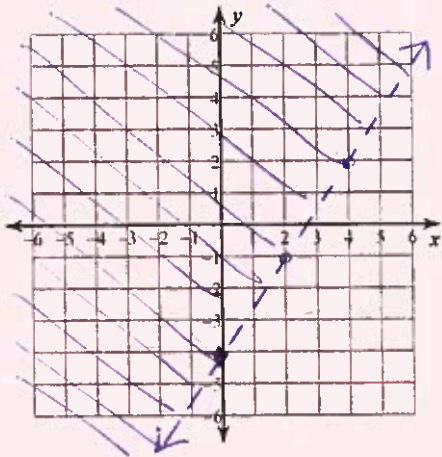
$10a + 9b = 250$   
 $-2(5a + 3b = 95)$   
 $-10a - 6b = -190$   
 $\frac{3b = 60}{3} = \frac{60}{3}$   
 $b = 20$   
 $5a + 3(20) = 95$   
 $5a + 60 = 95$   
 $-60 -60$   
 $\frac{5a = 35}{5} = \frac{35}{5}$   
 $a = 7$   
 Apple pies: \$7.00  
 blackberry pies: \$20.00

8) Jose's school is selling tickets to a fall musical. On the first day of ticket sales the school sold 8 senior citizen tickets and 9 child tickets for a total of \$96. The school took in \$36 on the second day by selling 4 senior citizen tickets and 3 child tickets. What is the price each of one senior citizen ticket and one child ticket?

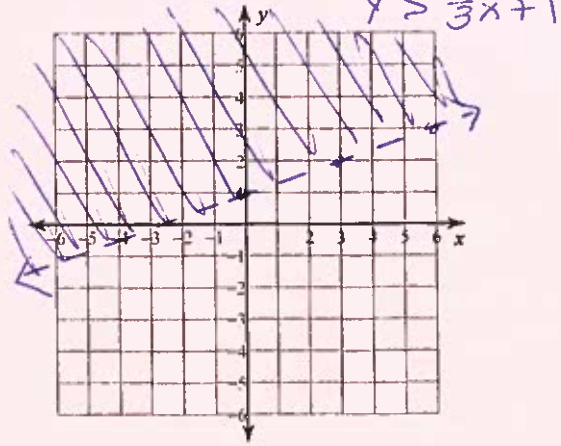
$8s + 9c = 96$   
 $-2(4s + 3c = 36)$   
 $-8s - 6c = -72$   
 $\frac{3c = 24}{3} = \frac{24}{3}$   
 $c = 8$   
 $4s + 3(8) = 36$   
 $4s + 24 = 36$   
 $-24 -24$   
 $\frac{4s = 12}{4} = \frac{12}{4}$   
 $s = 3$   
 Senior tickets: \$3.00  
 Child tickets: \$8.00

Sketch the graph of each linear inequality.

9)  $y > \frac{3}{2}x - 4$



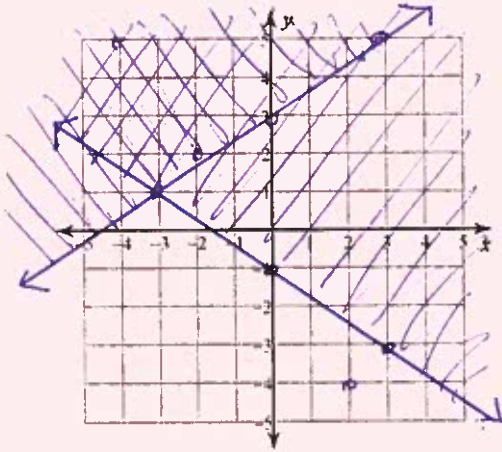
10)  $x - 3y < -3$



Sketch the solution to each system of inequalities.

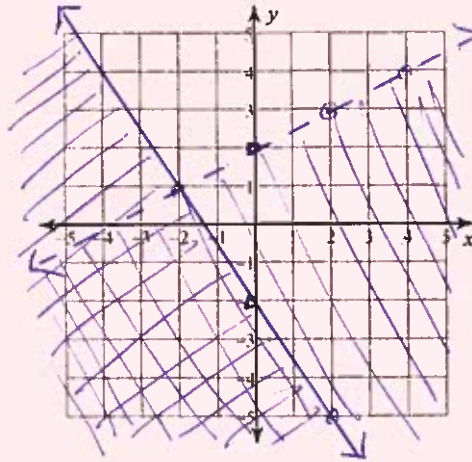
11)  $y \geq -\frac{2}{3}x - 1$

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



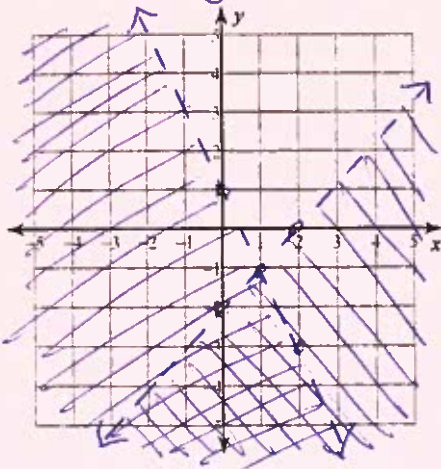
12)  $y < \frac{1}{2}x + 2$

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



13)  $2x + y < 1$   $y < -2x + 1$

$x - y > 2$   $y < x - 2$



14)  $5x + 2y < 6$   $y < -\frac{5}{2}x + 3$

$5x + 2y \geq -2$

$y \geq -\frac{5}{2}x - 1$

