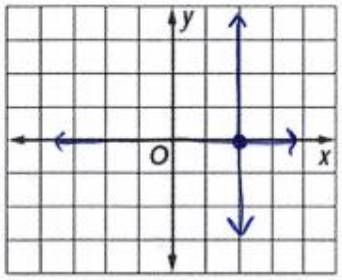
Algebra 2A Name Key

1.1

Assignment

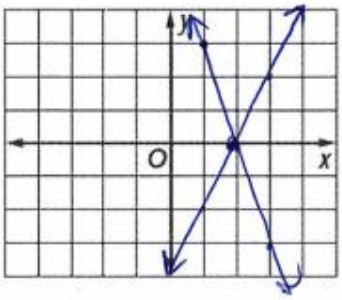
Solve each system of equations by graphing.

1. $x = 2$
   $y = 0$



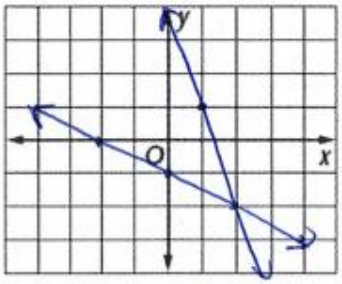
(2, 0)

2. $y = -3x + 6$
   $y = 2x - 4$



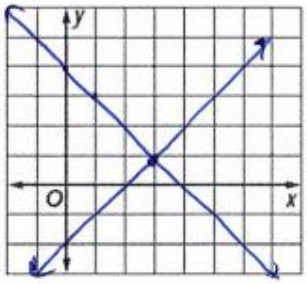
(2, 0)

3. $y = 4 - 3x$
   $y = -\frac{1}{2}x - 1$



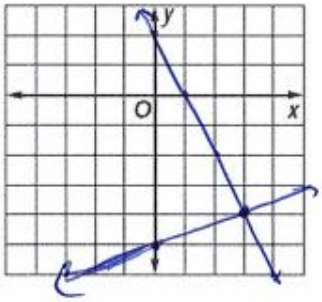
(2, -2)

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



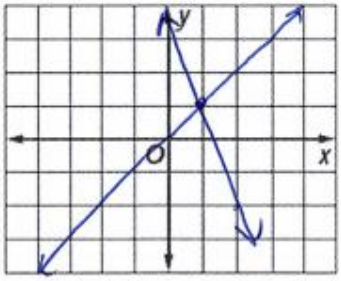
(3, 1)

5. $y = -2x + 2$
   $y = \frac{1}{3}x - 5$



(3, -4)

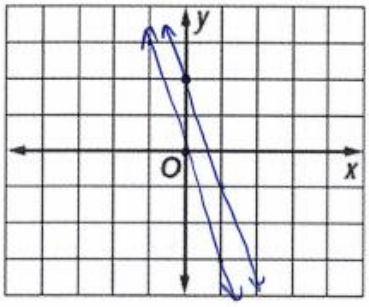
6. $y = x$
   $y = -3x + 4$



(1, 1)

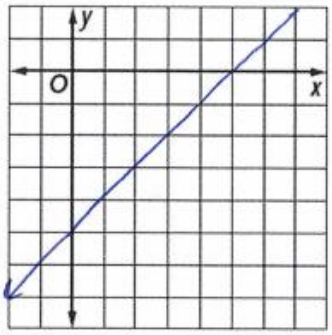
Graph each system of equations and describe it as *consistent and independent*, *consistent and dependent*, or *inconsistent*.

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



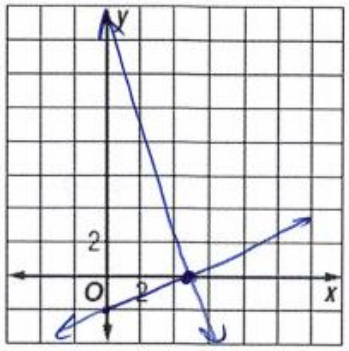
Inconsistent

8. $y = x - 5$
$-2x + 2y = -10$



Consistent and Dependent

9. $2x - 5y = 10$
$3x + y = 15$



Consistent and Independent

Algebra 2A **Name** Key

1.2

Assignment

Solve each system of equations by using substitution.

1. $\begin{aligned} m+n&=20 \\ m-n&=-4 \end{aligned}$

(8, 12)

2. $\begin{aligned} x+3y&=-3 \\ 4x+3y&=6 \end{aligned}$

(3, -2)

3. $\begin{aligned} x-y&=1 \\ 2x+3y&=12 \end{aligned}$

(3, 2)

4. $\begin{aligned} 3x+y&=5 \\ 2x-y&=5 \end{aligned}$

(2, -1)

5. $\begin{aligned} 2x+3y&=-4 \\ x+y&=3 \end{aligned}$

(13, -10)

Algebra 2A

Name Key

1.3

Assignment

Solve each system of equations by using elimination.

1. $2x - y = 5$
   $3x + y = 5$

   (2, -1)

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

   (1, -1)

3. $3x - 2y = 2$
   $3x + 4y = 50$

   (6, 8)

4. $2f + 3g = 9$
   $f - g = 2$

   (3, 1)

5. $-2x + y = -1$
   $x + 2y = 3$

   (1, 1)

6. $2x - y = 12$
   $2x - y = 6$

   No Solution

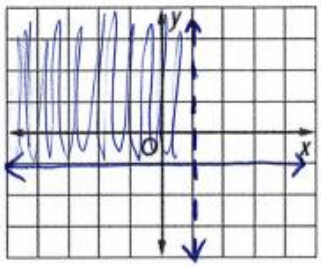
Algebra 2A Name Key

1.4

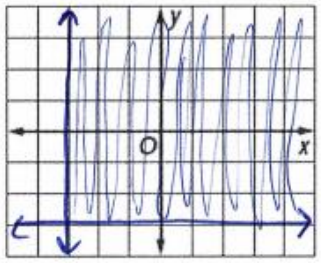
Assignment

Solve each system of inequalities by graphing.

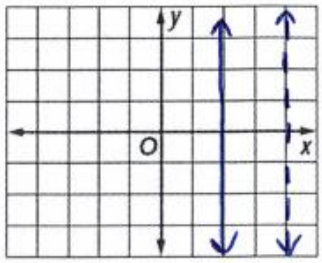
1. $x < 1$, $y \geq -1$



2. $x \geq -3$, $y \geq -3$



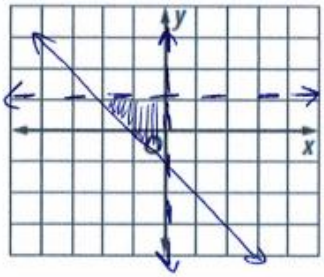
3. $x \leq 2$, $x > 4$



No Solution

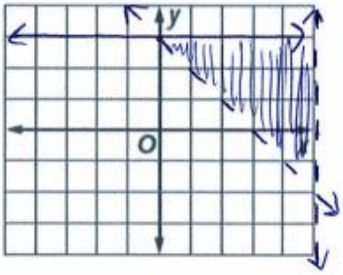
Find the coordinates of the vertices of the figure formed by each system of inequalities.

4. $y < 1$, $x < 0$, $y \geq -x - 1$



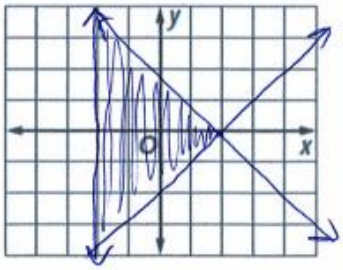
(0, 1)
(0, -1)
(-2, 1)

5. $y \geq 3 - x$, $y \leq 3$, $x < 5$



(0, 3)
(5, 3)
(5, -2)

6. $x \geq -2$, $y > x - 2$, $x + y \leq 2$



(-2, 4)
(-2, -4)
(2, 0)

Algebra 2A Name Key

1.5

Assignment

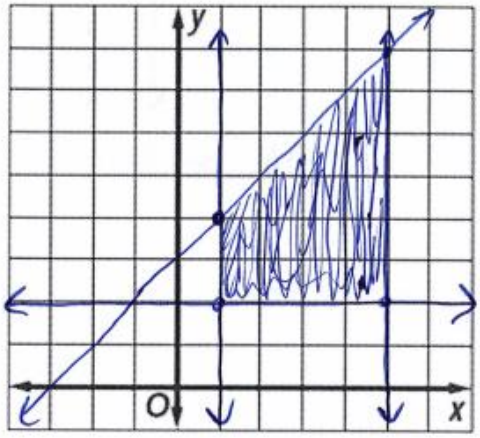
Graph each system of inequalities. Name the coordinates of the vertices of the feasible region. Find the maximum and minimum values of the given function for this region.

1. $y \geq 2$
   $1 \leq x \leq 5$
   $y \leq x + 3$
   $f(x, y) = 3x - 2y$

(1,2) (1,4) (5,8) (5,2)

Max: 11

Min: -5

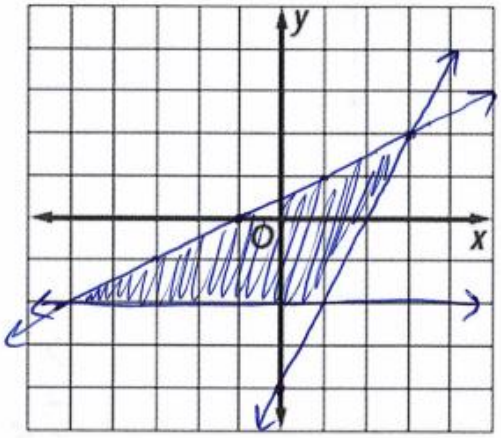


2. $y \geq -2$
   $y \geq 2x - 4$
   $x - 2y \geq -1$
   $f(x, y) = 4x - y$

(-5,-2) (3,2) (1,-2)

Max: 10

Min: -18

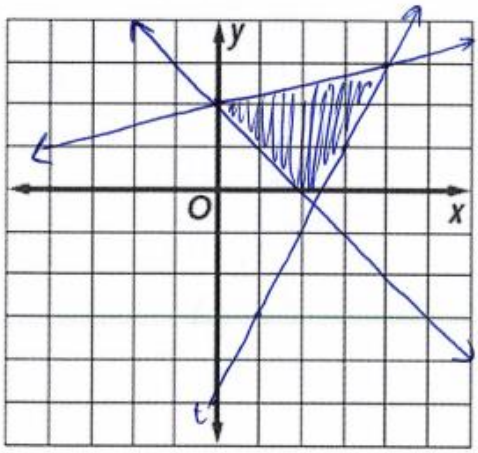


3. $x + y \geq 2$
   $4y \leq x + 8$
   $y \geq 2x - 5$
   $f(x, y) = 4x + 3y$

$(0,2)$ $(4,3)$ $\left(\frac{7}{3}, -\frac{1}{3}\right)$

Max: 25

Min: 6



Algebra 2A **Name** Key

1.6

Assignment

A glass blower can form 8 simple vases or 2 elaborate vases in an hour. In a work shift of no more than 8 hours, the worker must form at least 40 vases.

1. Let x represent the hours forming simple vases and y the hours forming elaborate vases. Write a system of inequalities involving the time spent on each type of vase.

$x \geq 0$

$y \geq 0$

$x + y \leq 8$

$8x + 2y \geq 40$

2. If the glass blower makes a profit of \$30 per hour worked on the simple vases and \$35 per hour worked on the elaborate vases, write a function for the total profit on the vases.

$f(x,y) = 30x + 35y$

3. Find the number of hours the worker should spend on each type of vase to maximize profit. What is that profit?

4 hours each for a profit of \$260