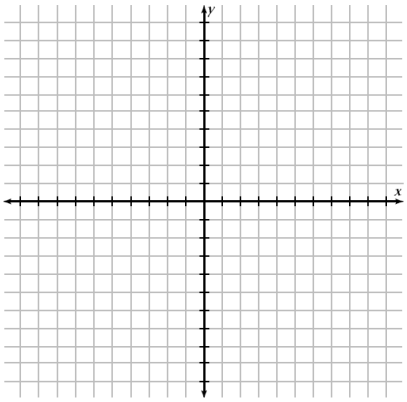
Unit 7: Solving a System of Linear Equations

Test Study Guide

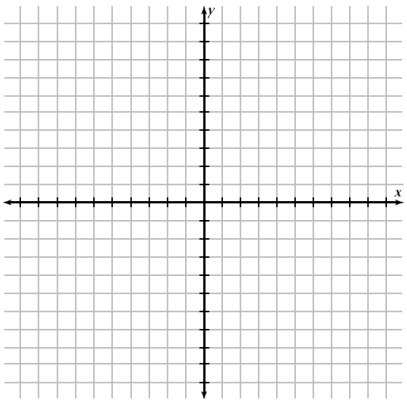
Directions: Solve the systems of equations by *graphing*. If there is no solution or infinitely many solutions, state this.

1) $y = \frac{1}{4}x$
$y = -x + 5$



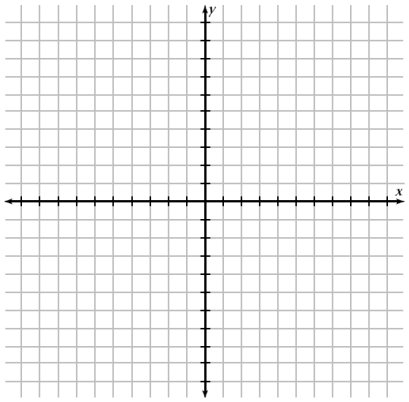
Solution: (,)

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



Solution: (,)

3) $5y = 10x + 5$
$3y = 6x + 3$



Solution: (,)

Directions: Solve the systems of equations using *substitution*. If there is no solution or infinitely many solutions, state this. Show all work to receive full credit.

4) $\begin{aligned} y &= -x + 5 \\ x - 4y &= 0 \end{aligned}$

Solution: (,)

5) $\begin{aligned} y &= -x + 3 \\ y &= -2x - 10 \end{aligned}$

Solution: (,)

6) $\begin{aligned} 2x + 5y &= 2 \\ x + y &= -8 \end{aligned}$

Solution: (,)

Directions: Solve the systems of equations using *elimination*. If there is no solution or infinitely many solutions, state this. Show all work to receive full credit.

7) $\begin{aligned} x + 2y &= -9 \\ -3x - 2y &= 11 \end{aligned}$

Solution: (,)

8) $\begin{aligned} 2x + y &= 14 \\ 5x + 3y &= 1 \end{aligned}$

Solution: (,)

9) $\begin{aligned} 8x - 16y &= -1 \\ x - 2y &= 4 \end{aligned}$

Solution: (,)

Directions: Answer the following word problems using <u>whichever method you prefer</u> (graphing, substitution, or elimination). Show all work to receive full credit. Answer in complete sentences.

10) Alex purchased 3 gallons of paint and 3 brushes for $105. The next day, he purchased 2 gallons of paint and 1 brush for $65. How much does each gallon of paint and each brush cost?

$$3x + 3y = 105$$
$$2x + y = 65$$

11) Cassidy bought 10 pieces of new clothing. If each pair of shorts cost $25 and each shirt cost $15, how many of each did she buy if she spent $170?

$$x + y = 10$$
$$25x + 15y = 170$$

Directions: Determine whether the lines that pass through the following pairs of points intersect at <u>one point, no points,</u> or at an <u>infinite amount of points</u>. Show all work to receive full credit.

12) If line A passes through (5, -5) and (1, 2) and line B passes through (0, 1) and (1, 9), do the lines intersect at one point, no points, or at an infinite amount of points?