Student: Cole Lamers **Date:** 06/29/19	**Instructor:** Kelly Galarneau **Course:** CA&T Internet (70263) Galarneau	**Assignment:** 8.4, 8.5 Systems of Nonlinear Equations & Inequali

1. The solutions of the following system represent the points of _____ of the graphs of equations (1) and (2).

$$\begin{cases} ax + by = c \\ (x-h)^2 + (y-k)^2 = r^2 \end{cases}$$

The solutions of the system represent the points of intersection of the graphs of equations (1) and (2).

2. Determine which of the given ordered pairs is/are solutions of the following system of equations.

$$\begin{cases} 4x + 5y = 7 \\ x - y^2 = 2 \end{cases}$$

The ordered pairs are (7,6), (8, − 4), (3, − 1), (5,8).

The solution(s) of the given system of equations is/are the ordered pair(s) (3, − 1) .
(Type ordered pairs. Use a comma to separate answers as needed.)

3. Solve the following system of equations by using the substitution method. Check your solutions.

$$\begin{cases} x^2 + y^2 = 9 \\ x = 3 \end{cases}$$

Select the correct choice below and fill in the answer box, if necessary.

- **A.** The solution set is $\{(3,0)\}$.
  (Type an ordered pair. Use a comma to separate answers as needed.)
- **B.** There is no solution.

4. Solve the system of equation (only real solutions) by the elimination method. Check your solutions.

$$\begin{cases} x^2 + y^2 = 181 \\ x^2 - y^2 = 19 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The solution set is $\{(10,9),(-10,-9),(-10,9),(10,-9),\}$.
  (Type an ordered pair. Use a comma to separate answers as needed.)
- **B.** There is no solution.

5. Use any method to solve the following system of equations.

$$\begin{cases} y^2 = x + 7 \\ 16y = x + 71 \end{cases}$$

Select the correct choice below and fill in the answer boxes, if necessary.

- **A.** The solution set is $\{(57,8)\}$. (Type an ordered pair.)
- **B.** The solution set is the empty set.

6. Watch the video and then solve the problem given below.

Click here to watch the video.[1]

Solve the system of equations by the substitution method.

$$\begin{cases} x^2 + y = 9 & (1) \\ 2x + y = 10 & (2) \end{cases}$$

The solution set is $\{ \quad (1,8) \quad \}$.
(Type an ordered pair. Use a comma to separate answers as needed.)

1: http://mediaplayer.pearsoncmg.com/assets/sIZx3MX8EPCYWEZKGv_Pc1kK57NFOYhR

7. Watch the video and then solve the problem given below.

Click here to watch the video.[2]

Solve the system of equations by the elimination method.

$$\begin{cases} x^2 + y^2 = 10 & (1) \\ x^2 - y^2 = 8 & (2) \end{cases}$$

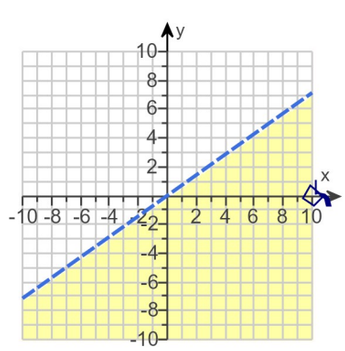
The solution set is $\{(3,1),(-3,1),(3,-1),(-3,-1)\}$.
(Type an ordered pair. Use a comma to separate answers as needed.)

2: http://mediaplayer.pearsoncmg.com/assets/RNMCm_ARlFqoSME_x_ipH0xjHBHn18hY

8. Graph the inequality.

$5x - 7y > 0$

Use the graphing tool to graph the inequality.

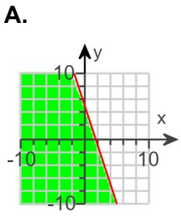


9. Graph the inequality.

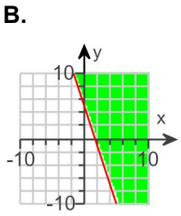
$3x + y < 5$

Choose the correct graph.

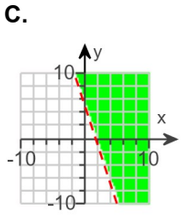
A.



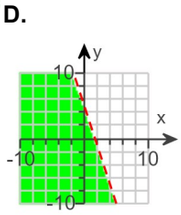
B.



C.



D.

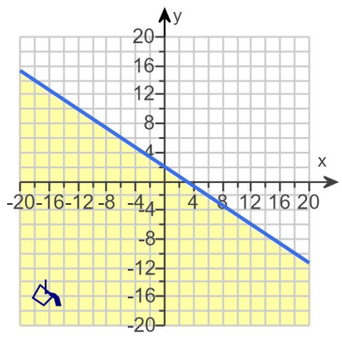


10.

Graph the inequality on a plane.

$2x + 3y \leq 6$

Use the graphing tool on the right to graph the inequality.



11. Determine if each ordered pair is a solution to the given system of linear inequalities in two variables.

$$x - y > -10$$
$$2x - 4y \leq 6$$
$$4x + 5y > 15$$

a. (3,5) **b.** (2,2) **c.** $(-1,4)$

a. Is the ordered pair (3,5) a solution to the system?

- [x] Yes
- [ ] No

b. Is the ordered pair (2,2) a solution to the system?

- [ ] No
- [x] Yes

c. Is the ordered pair $(-1,4)$ a solution to the system?

- [ ] No
- [x] Yes

12.

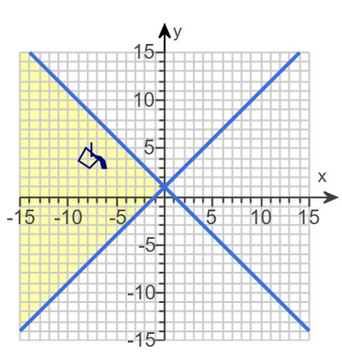
Graph the solution set of the system of linear inequalities. Then, find all the vertices, (if any) of the solution set.

$x + y \leq 1$
$x - y \leq -1$

Use the graphing tool to graph the system of inequalities.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- [x] **A.** The vertices are (0,1) .
  (Type an ordered pair. Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- [ ] **B.** There are no vertices of the solution set.

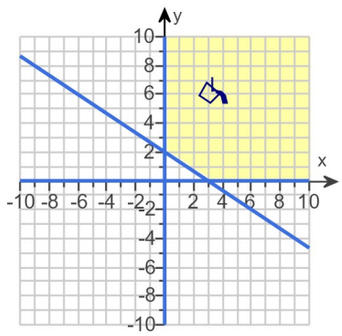


13.

Graph the solution set of the system of linear inequalities. Then, find all the vertices, (if any) of the solution set.

$$\begin{aligned} x &\geq 0 \\ y &\geq 0 \\ 2x + 3y &\geq 6 \end{aligned}$$

Use the graphing tool to graph the solution set of the system of linear inequalities.



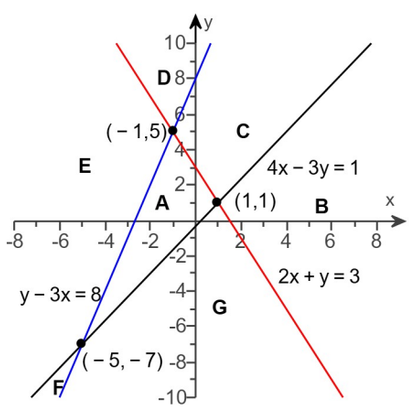
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The vertices are (3,0),(0,2) .
  (Type an ordered pair. Use a comma to separate answers as needed.)
- **B.** There are no vertices of the solution set.

14.

Use the following figure to indicate the region (A-G) that corresponds to the graph of the given system of inequalities.

$$\begin{cases} 2x + y \leq 3 \\ 4x - 3y \leq 1 \\ y - 3x \leq 8 \end{cases}$$



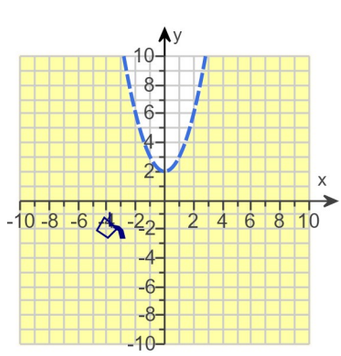
The region that corresponds to the graph of the given system of inequalities is A .

15.

Graph the inequality.

$$y < x^2 + 2$$

Use the graphing tool to graph the inequality.



16.

Graph the inequality.

$$y > (x - 5)^2 + 3$$

Use the graphing tool to graph the inequality.