

1. Explain what happens when a system of two linear equations is inconsistent. What effect does it have in obtaining a solution? What would the graph of such a system look like?

Choose the correct answer below.

- ☐ A. When a system of two linear equations is inconsistent, there is no solution. This means that there is no point (x,y) that satisfies both equations. The graph of such a system yields two identical lines.
- ☐ B. When a system of two linear equations is inconsistent, there is no solution. This means that there is no point (x,y) that satisfies both equations. The graph of such a system yields two perpendicular lines.
- ☐ C. When a system of two linear equations is inconsistent, there are infinitely many solutions. This means that every point (x,y) satisfies both equations. The graph of such a system yields two identical lines.
- ☐ D. When a system of two linear equations is inconsistent, there is no solution. This means that there is no point (x,y) that satisfies both equations. The graph of such a system yields two parallel lines.

2. How many possible solutions can a system of two linear equations in two unknowns have?

Select all that apply.

- ☐ A. Two
- ☐ B. Three
- ☐ C. One
- ☐ D. Four
- ☐ E. Infinitely many solutions
- ☐ F. No solution

3. Determine whether the given ordered pair is a solution to the system of equations.

$$\left(\frac{6}{5}, 6\right) \quad \begin{aligned} 10x + 9 &= 27 - y \\ 5x - 3y &= 0 \end{aligned}$$

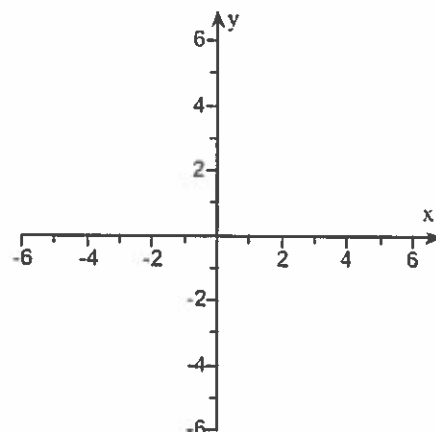
Is $\left(\frac{6}{5}, 6\right)$ a solution to the system?

- ☐ yes
- ☐ no

4. Solve the system of equations by graphing. Check your solution.

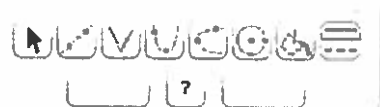
$$\begin{aligned} 4x - 3y &= 12 \\ 6x + y &= -4 \end{aligned}$$

Use the graphing tool to graph the system.



Select the correct choice below and fill in any answer boxes present in your choice.

- ☐ A. The solution to the system is . (Type an ordered pair.)
- ☐ B. There are infinitely many solutions.
- ☐ C. There is no solution.

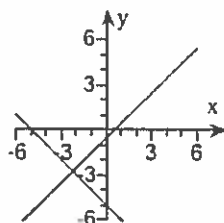


5. Solve the system of equations by graphing. Check your solution.

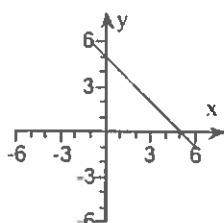
$$\begin{aligned} y &= -x + 5 \\ x + y &= -\frac{3}{5} \end{aligned}$$

Choose the correct graph of the equations.

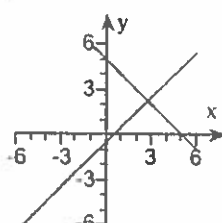
☐ A.



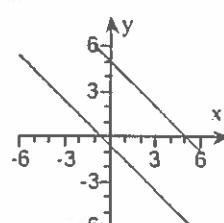
☐ B.



☐ C.



☐ D.



Select the correct choice below and fill in any answer boxes present in your choice.

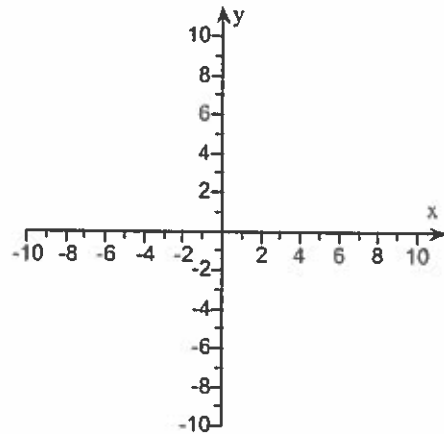
- ☐ A. The solution to the system is . (Type an ordered pair.)
- ☐ B. There is an infinite number of solutions.
- ☐ C. There is no solution.

6. Solve the system of equations by graphing.
Check your solution.

$$y = -5x + 1$$

$$4y + 20x = 4$$

Use the graphing tool to graph the system.



Select the correct choice below and fill in any answer boxes present in your choice.

☐ A. The solution to this system is .

(Type an ordered pair.)

☐ B. There are infinitely many solutions.

☐ C. There is no solution.



7. Solve the system of equations by substitution.

$$2x + y = 20$$

$$y = 3x$$

The solution set is .

(Type an ordered pair.)

8. Solve the system by substitution.

$$-x - 9y = -12$$

$$y = 8x - 23$$

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

☐ A. The solution set is . (Type an ordered pair.)

☐ B. There are infinitely many solutions.

☐ C. There is no solution.

9. Solve the following system by substitution.

$$x = 4y + 14$$

$$x = \frac{4}{3}y$$

The solution set is .

(Simplify your answer. Type an ordered pair.)

10. Solve the system by substitution.

$$\begin{aligned}y &= 2x \\ 6x - 3y &= 0\end{aligned}$$

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

- ☐ A. The solution set is $\{\square\}$. (Type an ordered pair.)
- ☐ B. There are infinitely many solutions.
- ☐ C. There is no solution.

11. Solve the system by substitution.

$$\begin{aligned}x &= 6y \\ 5x - 30y &= 5\end{aligned}$$

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

- ☐ A. The solution set is $\{\square\}$. (Type an ordered pair.)
- ☐ B. There are infinitely many solutions.
- ☐ C. There is no solution.

12. Find the solution to the system by the addition (elimination) method. Check your answers.

$$\begin{aligned}10x + 7y &= 21 & (1) \\ 5x + 9y &= 27 & (2)\end{aligned}$$

What is the solution to the system?

(Type an ordered pair.)

13. Find the solution to the system by the addition (elimination) method. Check your answers.

$$\begin{aligned}5s + 2t &= 11 & (1) \\ 4s - 6t &= 5 & (2)\end{aligned}$$

What is the solution to the system?

(Type an ordered pair of the form (s,t) . Use integers or fractions for any numbers in the expression.)

14. Find the solution to the system by the substitution method. Check your answers.

$$\frac{1}{3}x - \frac{1}{12}y = 4 \quad (1)$$

$$\frac{3}{4}x + \frac{3}{5}y = 9 \quad (2)$$

What is the solution to the system?

(Type an ordered pair.)

15. If possible, solve the system of equations. Use any method. If there is not a unique solution to the system, state a reason.

$$3x - y = 13 \quad (1)$$

$$8x + 3y = 46 \quad (2)$$

Select the correct choice below and fill in any answer boxes present in your choice.

- ☐ A. The solution to the system is . (Type an ordered pair.)
- ☐ B. There are infinitely many solutions.
- ☐ C. There is no solution.

Which of the statements below is a good explanation for the solution?

- ☐ The graphs of the two equations represent the same line.
- ☐ The graphs of the two equations never intersect.
- ☐ The graphs intersect at one point, so the solution is unique.

16. If possible, solve the system of equations. Use any method.

$$\begin{aligned}0.2x &= 0.1y - 1.5 & (1) \\ 2x - y &= 7 & (2)\end{aligned}$$

Select the correct choice below and fill in any answer boxes present in your choice.

- ☐ A. The solution to the system is . (Type an ordered pair.)
- ☐ B. There is an infinite number of solutions.
- ☐ C. There is no solution.

Describe the system of equations.

- ☐ The equations are dependent. Their graphs are identical.
- ☐ The equations are inconsistent. Their graphs are parallel lines.
- ☐ The equations are independent and consistent. Their graphs intersect at one point.

17. If possible, solve the system of equations. Use any method. If there is not a unique solution to the system, state a reason.

$$\begin{aligned}4x - 3y &= 5 & (1) \\ -12x + 9y &= -15 & (2)\end{aligned}$$

Select the correct choice below and fill in any answer boxes present in your choice.

- ☐ A. The solution to this system is . (Type an ordered pair.)
- ☐ B. There are infinitely many solutions.
- ☐ C. There is no solution.

Which of the statements below is a good explanation for the solution?

- ☐ The graphs intersect at one point, so the solution is unique.
- ☐ The graphs of the two equations never intersect.
- ☐ The graphs of the two equations represent the same line.