Student: Cole Lamers **Date:** 06/29/19	**Instructor:** Kelly Galarneau **Course:** CA&T Internet (70263) Galarneau	**Assignment:** 8.1, 8.2 Systems of Linear Equations

1. Determine which of the ordered pairs $(-5,3)$, $(6,6)$, and $(4,1)$ are solutions of the following system of equations.

$$\begin{cases} 2x+9y = 17 \\ -5x+2y = -18 \end{cases}$$

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

- **A.** (4,1)
  (Use a comma to separate answers as needed. Type an ordered pair.)
- **B.** None of the ordered pairs are solutions.

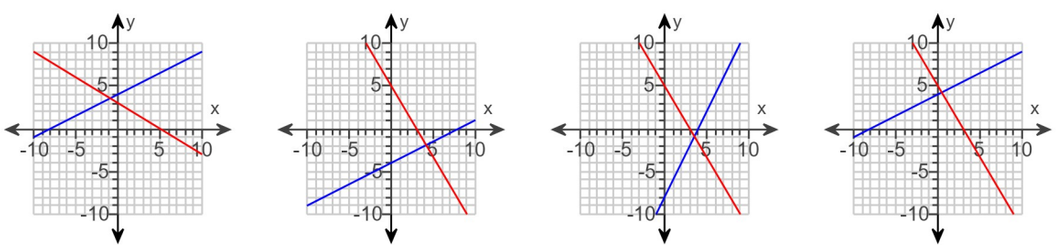
2. Watch the video and then solve the problem given below.

Click here to watch the video.[1]

Use the graphical method to solve the system of equations $\begin{cases} x-2y=8 \\ 5x+3y=15 \end{cases}$.

Choose the correct graph below.

- **A.**
- **B.**
- **C.**
- **D.**

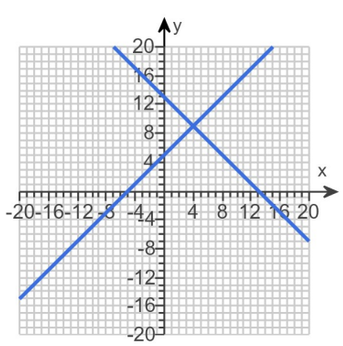


1: http://mediaplayer.pearsoncmg.com/assets/gd0J6yaXqr74MrOuPJXjFxc5_H6Ky8K7?clip=2

3. Solve the system of equations by graphing.

$x-y=-5$
$x+y=13$

Use the graphing tool to graph the system.



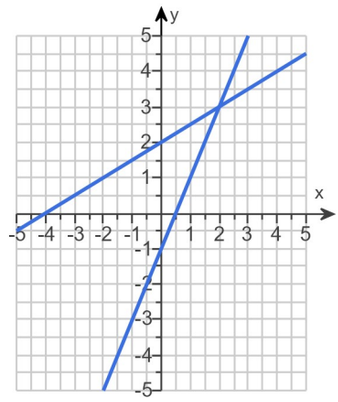
What is the solution of the system of equations? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The solution is (4,9). (Type an ordered pair.)
- **B.** The system of equations has infinitely many solutions.
- **C.** The system of equations has no solution.

4.

Determine the solution to the following system of equations graphically. If the system is dependent or inconsistent, so state.

$-x+2y=4$
$-2x+y=-1$



Use the graphing tool to graph the system.

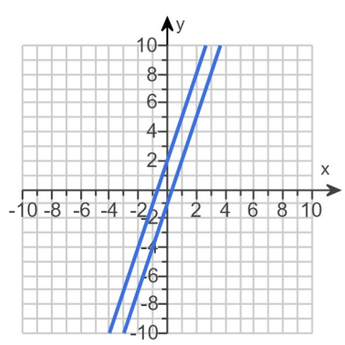
What is the solution to the system of equations? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** (2,3) (Type an ordered pair.)
- **B.** There are infinitely many solutions.
- **C.** There is no solution.

5.

Determine the solution to the system of equations graphically. If the system is inconsistent or dependent, so state.

$y = 3x-1$
$2y = 6x+4$



Use the graphing tool to graph the system.

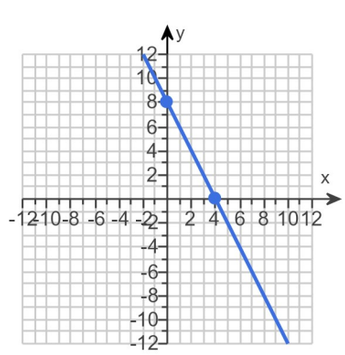
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The solution to the system is _____. (Type an ordered pair.)
- **B.** The system is dependent.
- **C.** The system is inconsistent.

6.

Estimate the solution of the following system by using the graphical method. Check your solution.

$$\begin{cases} 2x+y=8 \\ y=-2x+8 \end{cases}$$



Use the graphing tool to graph the system.

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

- **A.** There is one solution. The solution set is $\{$ _____ $\}$. (Type an ordered pair. Simplify your answer.)
- **B.** There are infinitely many solutions. The solution set is the set of all ordered pairs $\{(x, -2x+8)\}$, where x is any real number. (Type an expression using x as the variable. Simplify your answer.)
- **C.** There is no solution.

7. Determine whether the following system is consistent or inconsistent. If the system is consistent, determine whether the equations are dependent or independent. Do not solve the system.

$$\begin{cases} 3x + 4y = 7 \\ 9x + 12y = 21 \end{cases}$$

Choose the correct answer below.

- **A.** The system is consistent and independent.
- **B.** The system is consistent and dependent.
- **C.** The system is inconsistent.

8. Determine whether the following system is consistent or inconsistent. If the system is consistent, determine whether the equations are dependent or independent. Do not solve the system.

$$\begin{cases} x + 2y = -3 & (1) \\ 2x - y = 4 & (2) \end{cases}$$

Choose the correct answer below.

- **A.** consistent and independent
- **B.** inconsistent
- **C.** consistent and dependent

9. Determine whether the following system is consistent or inconsistent. If the system is consistent, determine whether the equations are dependent or independent. Do not solve the system.

$$\begin{cases} 4x - 5y = 9 \\ 8x - 10y = 27 \end{cases}$$

Choose the correct answer below.

- **A.** The system is consistent and dependent.
- **B.** The system is consistent and independent.
- **C.** The system is inconsistent.

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

Click here to watch the video.[2]

Solve the system of equations $\begin{cases} 3x + y = 8 \\ 6x + 2y = 5 \end{cases}$.

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

- **A.** The solution(s) is/are _____.
  (Type an ordered pair. Use a comma to separate answers as needed.)
- **B.** There are infinitely many solutions.
- **C.** There is no solution.

2: http://mediaplayer.pearsoncmg.com/assets/gd0J6yaXqr74MrOuPJXjFxc5_H6Ky8K7?clip=3

11. Solve the following system of equations by the substitution method. Check the solutions.

$$\begin{cases} x - y = -5 \\ 7x + 9y = -99 \end{cases}$$

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

- **A.** There is one solution. The solution set is $\{(-9, -4)\}$.
  (Type an ordered pair. Simplify your answer.)
- **B.** There are infinitely many solutions. The solution set is the set of all ordered pairs $\{(x, \quad)\}$, where x is any real number.
  (Type an expression using x as the variable. Simplify your answer.)
- **C.** The solution set is the empty set.

12. Solve the following system of equations by the elimination method. Check your solution.

$$\begin{cases} x + y = 7 & (1) \\ x - y = 1 & (2) \end{cases}$$

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

- **A.** There is one solution. The solution set is $\{(4,3)\}$.
  (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions. The solution set is the set of all ordered pairs $\{(x, \quad)\}$, where x is any real number.
  (Type an expression using x as the variable.)
- **C.** The solution set is the empty set.

13. Solve the following system of equations by the elimination method. Check your solution.

$$\begin{cases} x + 3y = 7 \\ 3x + 5y = 9 \end{cases}$$

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

- **A.** There is one solution. The solution set is $\{(-2,3)\}$.
  (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions. The solution set is the set of all ordered pairs $\{(x, \quad)\}$, where x is any real number.
  (Type an expression using x as the variable.)
- **C.** The solution set is the empty set.

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

$$\begin{cases} 2x - 5y = -3 \\ 5x - 4y = 18 \end{cases}$$

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

- **A.** There is one solution. The solution set is $\{(6,3)\}$.
  (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions. The solution set is the set of all ordered pairs $\{(x, \quad)\}$, where x is any real number.
  (Type an expression using x as the variable.)
- **C.** The solution set is the empty set.

15. Use a system of equations to solve the following problem.

The sum of the diameters of the largest and smallest pizzas sold at a pizza shop is 39 inches. The difference in their diameters is 11 inches. Find the diameters of the largest and smallest pizzas.

The diameter of the largest pizza is 25 inches and the diameter of the smallest pizza is 14 inches. (Simplify your answer. Type an integer or a decimal.)

16. There were 501 tickets purchased for a major league baseball game. The lower box tickets cost $12.50 and the upper reserved tickets cost $8.00. The total amount of money spent was $4948.50. How many of each kind of ticket were purchased?

How many lower box tickets were purchased?
209

How many upper reserved tickets were purchased?
292

17. Ms. Burke invested $24,000 in two accounts, one yielding 5% interest and the other yielding 12%. If she received a total of $2,180 in interest at the end of the year, how much did she invest in each account?

The amount invested at 5% was $ 10000 .

The amount invested at 12% was $ 14000 .

18. Solve the following system for x and y.

$$\begin{cases} 4\log_3 x + 3\log_3 y = 16 \\ 5\log_3 x - \log_3 y = 1 \end{cases}$$

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

- **A.** There is a unique solution. The solution set is $\{$ (3,81) $\}$.
  (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions. The solution set is the set of all ordered pairs $\{(x,$ $)\}$, where x is any real number.
  (Type an expression using x as the variable.)
- **C.** There is no solution. The solution set is the empty set.

19. Determine whether $(-4,-2,1)$ is a solution of the system.

$$\begin{aligned} x + y + z &= -5 \\ x - 2y - z &= -1 \\ 3x + 2y - z &= -15 \end{aligned}$$

Is the ordered triple a solution of the system?
- No
- Yes

20. Solve the following triangular linear system.

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

The solution set is $\{$ $(-3,3,3)$ $\}$. (Simplify your answer. Type an ordered triple.)

21. Use back-substitution to solve the following system.

$$\begin{cases} x + y - 2z = -10 \\ -4y + z = 9 \\ z = 5 \end{cases}$$

The solution set is $\{($ 1 , -1 , 5 $)\}$. (Simplify your answers.)

22. Find the solution set of each linear system. Identify inconsistent systems and dependent equations.

$$\begin{cases} x + 3y - z = 2 \\ x + 4y + z = 8 \\ x - 5y + 4z = -4 \end{cases}$$

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

- **A.** The system is consistent and the solution set is $\{($ -2 , 2 , 2 $)\}$.
  (Simplify your answers. Use integers or fractions for any numbers in the expression.)
- **B.** The system is consistent and dependent. The solution set is the set of all ordered triples $\{($, ,z$)\}$, where z is any real number.
  (Type an expression using z as the variable.)
- **C.** The system is inconsistent.

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

Click here to watch the video.[3]

Solve the system of linear equations $\begin{cases} 2x + 3y - 3z = -2 \\ -3x - y - 13z = 17 \end{cases}$.

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

- **A.** There is exactly one solution, (, ,).
  (Simplify your answers.)
- **B.** There is no solution.
- **C.** There are infinitely many solutions of the form
  ($-7-6z$, $4+5z$, z).
  (Type expressions using z as the variable. Simplify your answers.)

3: http://mediaplayer.pearsoncmg.com/assets/KyDXLABOeKzsq1O8h14pq98Wvv1GVFvO?clip=5