

Systems of Equations Review Sheet

You have a test coming up on April 26th. The test will cover the following concepts:

- **Checking a potential solution to a system**

1. Determine whether the ordered pair $(3, -5)$ is a solution to the system $\begin{cases} -2x + y = -11 \\ 2x - 2y = -4 \end{cases}$

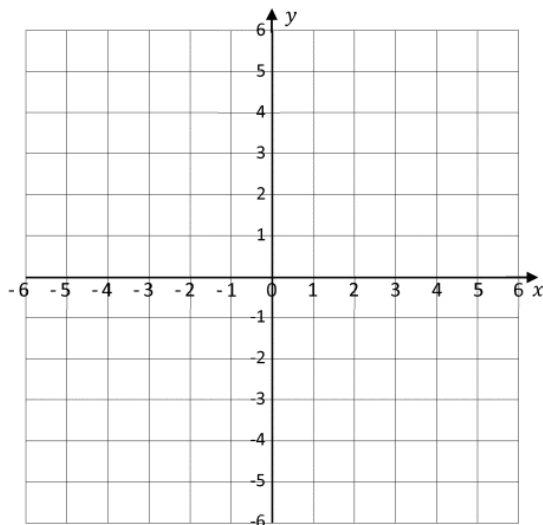
- **Solving a system of linear equations in two variables using graphing**

Good candidates for solving by graphing are in slope intercept form, or easily manipulated to slope intercept form. Graphing allows you to compare two situations in their entirety.

2. Solve the system $\begin{cases} -x + y = -3 \\ 3x + 3y = 9 \end{cases}$

by graphing

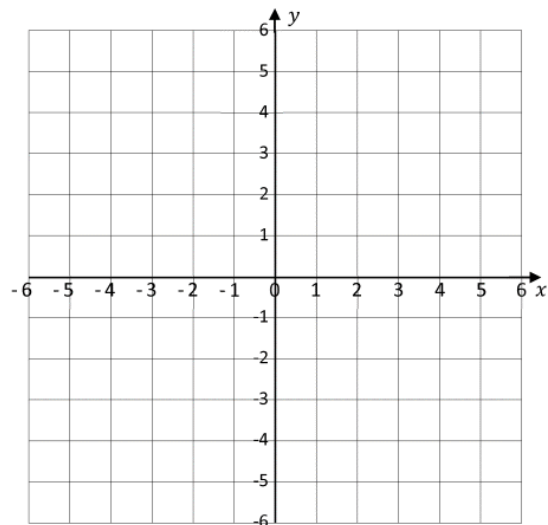
Check your solution.



3. Solve the system $\begin{cases} -2x + 2y = 4 \\ 3x + 4y = 8 \end{cases}$

by graphing

Check your solution.



- **Solving a system of linear equations in two variables using substitution.**

Good candidates for solving using substitution are equations in which it is easy to get one variable isolated by itself.

For each system below, explain which equation you would use to substitute in the other equation and solve it for one variable. You do not need to solve the system.

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

5.
$$\begin{cases} 3x - 7y = 12 \\ 3x - 12y = 6 \end{cases}$$

6.
$$\begin{cases} \frac{1}{5}x + y = 8 \\ 4x - 3y = 1 \end{cases}$$

Solve the system of linear equations by substitution. Check your solution.

7.
$$\begin{cases} x - y = 9 \\ 2x + 5y = 4 \end{cases}$$

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

- **Solving a system of linear equations in two variables using elimination**

Good candidates for solving using elimination are equations that can be written in standard form easily and have opposite terms, or terms that can be easily manipulated to create opposites.

Write the following equations in standard form.

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

10. $y = -4x - 8$

11. $47 - x = 14y$

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Solve the system of linear equations using elimination. Check your solution.

$$12. \begin{cases} 6x - 2y = -11 \\ -10x + 2y = 14 \end{cases}$$

$$13. \begin{cases} 5y = 6x + 25 \\ -2x - 4y = 14 \end{cases}$$

- **Determining whether a system of equations in two variables is consistent or inconsistent and subsequently dependent or independent.**

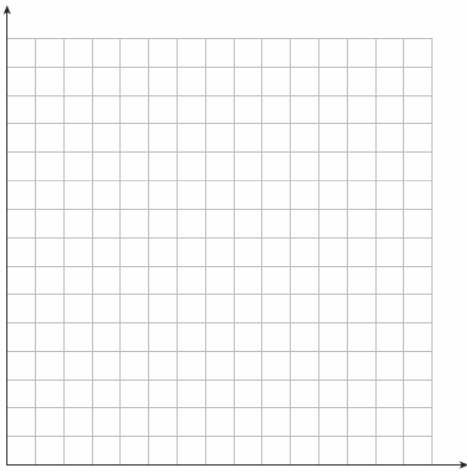
Solve the system and determine whether it is consistent or inconsistent and dependent or independent.

$$14. \begin{cases} y = -5x - 2 \\ 5x + y = 0 \end{cases}$$

$$15. \begin{cases} 2x - 4y = 10 \\ -12x + 24y = -60 \end{cases}$$

- **Solve application problems using systems of linear equations.**

16. Hamster Heaven charges an annual fee of \$20 plus \$2.50 for each day of hamster activities you attend. Hamster Fun World charges an annual fee of \$35 plus \$1 for each day of hamster activities you attend. Write and solve a linear system using a method of your choosing and explain which company you would use for your hamster and why. A graph is included below if you would like to graph it. Make sure you identify your variables, check your solution and write a sentence.



17. You and your friend are selling raffle tickets for a new laptop. You sell 14 tickets than your friend sells. Together, you and your friend sell 58 tickets. Write a system of equations that represents this situations. How many tickets do each of you sell? Make sure you identify your variables, check your solution and write a sentence.

You should study your notes as well as your completed daily assignments to prepare for the test.