

Name \_\_\_\_\_

Mrs. Roubos

Date \_\_\_\_\_

8R Period \_\_\_\_\_

Extra Review for Solving Systems Algebraically Quiz

Solve the following systems of equations algebraically for both variables and CHECK!

1)  $y = x + 6$   
 $y = 2x + 3$

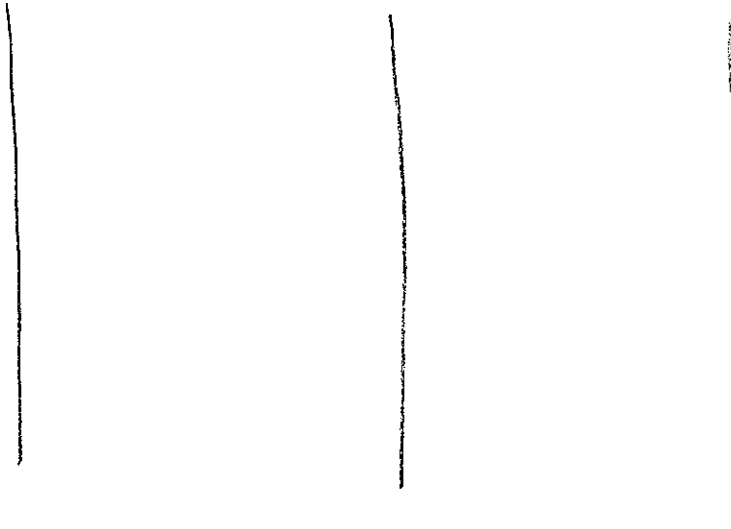
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2)  $y = 2x + 2$   
 $y = -x - 4$

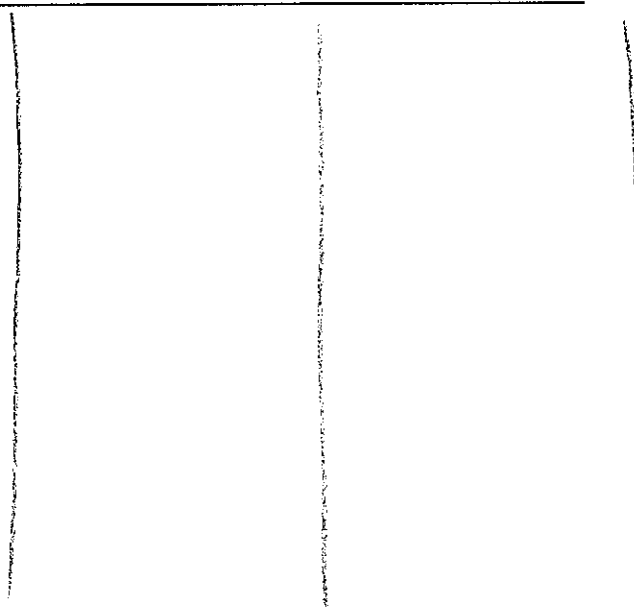
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For questions 3 & 4 Use the **elimination method** to solve for x & y and check!

3)  $6x - 10y = -12$   
 $-6x + 9y = 15$

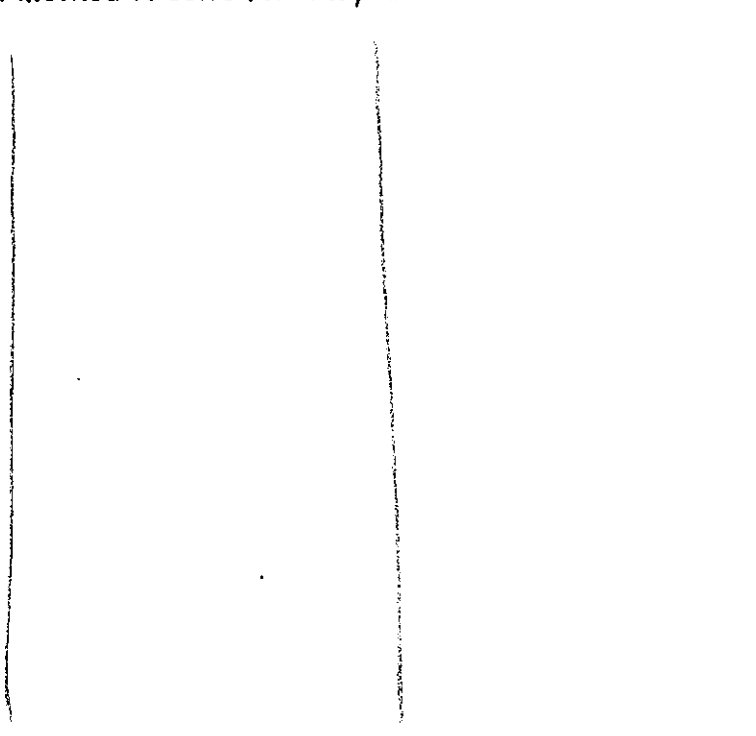


4)  $6x + 2y = 14$   
 $3x + 2y = 8$



5) Use the **substitution method** to solve for x & y and check!

$y = x + 4$   
 $x + y = 2$



Extra Review for Solving Systems Algebraically Quiz

Solve the following systems of equations algebraically for both variables and CHECK!

$$\begin{aligned}
 1) \quad & y = x + 6 \\
 & y = 2x + 3 \\
 & x + 6 = 2x + 3 \\
 & \underline{-x \quad -x} \\
 & 6 = x + 3 \\
 & \underline{-3 \quad -3} \\
 & 3 = x \\
 & \boxed{x = 3}
 \end{aligned}$$

$$\begin{aligned}
 & y = x + 6 \\
 & y = 3 + 6 \\
 & \boxed{y = 9} \\
 & \boxed{(3, 9)}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Check \#1} \\
 & \underline{(3, 9)} \\
 & \quad xy \\
 & y = x + 6 \\
 & 9 = 3 + 6 \\
 & 9 = 9 \\
 & \quad \checkmark
 \end{aligned}$$

$$\begin{aligned}
 & \text{Check \#2} \\
 & \underline{(3, 9)} \\
 & \quad xy \\
 & y = 2x + 3 \\
 & 9 = 2(3) + 3 \\
 & 9 = 6 + 3 \\
 & 9 = 9 \\
 & \quad \checkmark
 \end{aligned}$$

$$\begin{aligned}
 2) \quad & y = 2x + 2 \\
 & y = -x - 4 \\
 & 2x + 2 = -x - 4 \\
 & \underline{+x \quad +x} \\
 & 3x + 2 = -4 \\
 & \underline{-2 \quad -2} \\
 & 3x = -6 \\
 & \frac{3x}{3} = \frac{-6}{3} \\
 & \boxed{x = -2}
 \end{aligned}$$

$$\begin{aligned}
 & y = 2x + 2 \\
 & y = 2(-2) + 2 \\
 & y = -4 + 2 \\
 & \boxed{y = -2} \\
 & \boxed{(-2, -2)}
 \end{aligned}$$

$$\begin{aligned}
 & \text{check \#1} \\
 & \underline{(-2, -2)} \\
 & \quad xy \\
 & y = 2x + 2 \\
 & -2 = 2(-2) + 2 \\
 & -2 = -4 + 2 \\
 & -2 = -2 \\
 & \quad \checkmark
 \end{aligned}$$

$$\begin{aligned}
 & \text{check \#2} \\
 & \underline{(-2, -2)} \\
 & \quad xy \\
 & y = -x - 4 \\
 & -2 = -(-2) - 4 \\
 & -2 = 2 - 4 \\
 & -2 = -2 \\
 & \quad \checkmark
 \end{aligned}$$

For questions 3 & 4 Use the elimination method to solve for x & y and check!

3) 
$$\begin{array}{r} 6x - 10y = -12 \\ + \quad -6x + 9y = 15 \\ \hline \end{array}$$

go right to combining like terms. B/c the 1st terms are already additive inverses.

$$\begin{array}{r} -1y = 3 \\ -1 \quad -1 \\ \hline y = -3 \end{array}$$

$$\begin{array}{r} 6x - 10y = -12 \\ 6x - 10(-3) = -12 \\ 6x + 30 = -12 \\ -30 \quad -30 \\ \hline 6x = -42 \\ \frac{6x}{6} = \frac{-42}{6} \\ x = -7 \end{array}$$

$$\begin{array}{l} \text{Check \#1} \\ (-7, -3) \\ x \ y \\ 6x - 10y = -12 \\ 6(-7) - 10(-3) = -12 \\ -42 + 30 = -12 \\ -12 = -12 \end{array}$$

$$\begin{array}{l} \text{Check \#2} \\ (-7, -3) \\ -6x + 9y = 15 \\ -6(-7) + 9(-3) = 15 \\ 42 - 27 = 15 \\ 15 = 15 \end{array}$$

4) 
$$\begin{array}{r} 6x + 2y = 14 \\ -6 \quad 3x + 2y = 8 \\ \hline \end{array}$$

Need to create additive inverse 1st.

Don't forget to make the bottom # negative & to distribute to all 3 terms.

$$\begin{array}{r} 18x + 6y = 42 \\ -18x - 12y = -48 \\ \hline -6y = -6 \\ -6 \quad -6 \\ \hline y = 1 \end{array}$$

Must plug into original. Checks must be in original.

$$\begin{array}{r} 6x + 2y = 14 \\ 6x + 2(1) = 14 \\ 6x + 2 = 14 \\ -2 \quad -2 \\ \hline 6x = 12 \\ \frac{6x}{6} = \frac{12}{6} \\ x = 2 \end{array}$$

$$\begin{array}{l} \text{Check \#1} \\ (2, 1) \\ x \ y \\ 6x + 2y = 14 \\ 6(2) + 2(1) = 14 \\ 12 + 2 = 14 \\ 14 = 14 \end{array}$$

$$\begin{array}{l} \text{Check \#2} \\ (2, 1) \\ x \ y \\ 3x + 2y = 8 \\ 3(2) + 2(1) = 8 \\ 6 + 2 = 8 \\ 8 = 8 \end{array}$$

5) Use the substitution method to solve for x & y and check!

$$\begin{array}{r} y = x + 4 \\ x + y = 2 \end{array}$$

Always write the equation with the x & y on the same side 1st.

$$\begin{array}{r} x + (y) = 2 \\ x + (x + 4) = 2 \\ (x + x) + 4 = 2 \\ 2x + 4 = 2 \\ -4 \quad -4 \\ \hline 2x = -2 \\ \frac{2x}{2} = \frac{-2}{2} \\ x = -1 \end{array}$$

$$\begin{array}{r} y = x + 4 \\ y = (-1) + 4 \\ y = -1 + 4 \\ y = 3 \end{array}$$

$$\begin{array}{l} \text{Check \#1} \\ (-1, 3) \\ x \ y \\ y = x + 4 \\ 3 = -1 + 4 \\ 3 = 3 \end{array}$$

$$\begin{array}{l} \text{Check \#2} \\ (-1, 3) \\ x \ y \\ x + y = 2 \\ -1 + 3 = 2 \\ 2 = 2 \end{array}$$