

SOLVING SYSTEMS BY SUBSTITUTION: PART I

STEPS TO SOLVE SYSTEMS BY SUBSTITUTION

- _____ one of the equations for “y =” if necessary.
- _____ the value for “y” in the second equation.
- _____ the new equation to find “x”.
- _____ the value for “x” in either of the original equations to find “y”.
- _____ your answer by plugging the x and y-values back into the original equations.

Solve each system of equations using substitution. Be sure to check your solution.

1. $y = 3x$
 $x + y = -32$

✓CHECK:

2. $y = 9x - 2$
 $y = 3x + 10$

✓CHECK:

3. $y = -x + 4$
 $5x + 6y = 13$

✓CHECK:

4. $-3x + 4y = 7$
 $y = 3x - 5$

✓CHECK:

5.

$$-2x + y = -3$$

$$-6x + 4y = 4$$

6.

$$-10x + 2y = 4$$

$$-9x + 3y = 18$$

✓CHECK:

✓CHECK:

Apply your knowledge of solving systems using substitution to answer the questions below.

7. The sum of Andy and Brett's ages is 44. Andy's age is 8 more than twice Brett's age.

- What are the variables in this situation?
- Write a system of equations that could be used to represent the situation.
- Solve the system of equations by using substitution. Then, list Andy's age and Brett's age.

8. Describe some advantages to solving a system of equations by substitution instead of by graphing.

Summarize today's lesson:

SOLVING SYSTEMS BY SUBSTITUTION: PART I

Solve each system of equations by substitution. Match each answer below to help you solve the riddle.

<p>1</p> $y = x + 2$ $5x - 4y = -3$	<p>2</p> $3x - 8y = 24$ $y = x - 8$
<p>3</p> $y = 5x - 9$ $-2x - 3y = -7$	<p>4</p> $-4x + y = 6$ $y = 7x - 6$
<p>5</p> $x + y = 75$ $10x + y = 48$	<p>6</p> $y = x + 8$ $4x - 2y = -12$
<p>7</p> $y = 2x + 3$ $y = -2x + 15$	<p>8</p> $-3x - 4y = 2$ $6x + 6y = -6$

A: (-3, 78)	C: (4, 18)	O: (-2, 1)	L: (4, 22)	M: (50, 3)	E: (5, 7)
R: (2, 1)	D: (10, 2)	G: (3, 9)	U: (-5, 7)	S: (8, 0)	B: (2, 10)

WHAT DO YOU CALL YOUR FRIENDS IN MATH CLASS?

5 4 7 1 6 3 8 2