

Lesson 5-3: Solving Systems by Substitution

1. Sample answer: Substitution is a useful solution method when a graph of the system of equations does not show a precise solution. It makes it possible to use algebra techniques to solve for a solution or to determine whether there is no solution or infinitely many solutions.
2. Sample answer: The method results in a statement that is never true.
3. Sample answer: Once you solve for one variable, you must substitute the expression into the other equation. Kavi substituted the expression into the same equation. The correct solution is $x = 7, y = 3$.
4. $x = 24, y = 16$
5. There is no solution to this system of equations.
6. There are infinitely many solutions to this system of equations.
7.

$r + 276$	1,195
$2r$	1,471
2,390	1,471; 1,195
1,195	
8. 4.5
9
9
no
9. -5
-5y
25
infinitely many
10. 217 children, 264 adults
11. a. $x = -4, y = -9$
b. Sample answer: Tim switched the values of the variables.
12. No; Sample answer: There is no solution to the system.
13. a. $x = 1, y = \frac{5}{8}$
b. Sample answer: It would be easier to substitute the expression $8y - 4$ from the first equation into the second equation because the first equation already shows x in terms of y .
14. $W = 8$ in. , $L = 10$ in.
15. a. 100 adult tickets, 400 student tickets
b. \$10
16. A, E
17. 4 cats, 2 dogs