

Readiness Assurance Outcomes

Before beginning this module, each student should be able to...

- Determine if a system to a two-variable system of linear equations will have zero, one, or infinitely-many solutions by graphing.
- Find the unique solution to a two-variable system of linear equations by back-substitution.

Readiness Assurance Resources

The following resources will help you prepare for this module.

- <https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-systems-topic/cc-8th-systems-graphical/a/systems-of-equations-with-graphing>
- <https://www.khanacademy.org/math/algebra/systems-of-linear-equations/solving-systems-of-equations-v/practice-using-substitution-for-systems>

Readiness Assurance Test

Choose the most appropriate response for each question.

- 1) Which of these graphs represents the following system of linear equations?

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



- 2) How many solutions are there for the system of linear equations represented by the following graph?



- (a) One (b) Two (c) Zero (d) Infinitely-many
- 3) Which of these graphs represents the following system of linear equations?

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



- 4) How many solutions are there for the system of linear equations represented by the following graph?
(This graph represents two completely overlapping lines.)



- (a) Zero (b) One (c) Two (d) Infinitely-many

5) How many solutions are there for the system of linear equations represented by the following graph?



- (a) Zero (b) One (c) Two (d) Infinitely-many

6) How many solutions are there for the system of linear equations represented by the following graph?
(This graph represents two non-overlapping parallel lines.)



- (a) Zero (b) One (c) Two (d) Infinitely-many

7) Solve the following system of linear equations.

$$\begin{aligned}y &= 2x + 5 \\y &= -x + 2\end{aligned}$$

- (a) $(x, y) = (-1, 3)$ (b) $(x, y) = (4, -2)$ (c) There are no solutions. (d) There are infinitely-many solutions.

8) Solve the following system of linear equations.

$$\begin{aligned}y &= 3x + 5 \\y &= 3x + 2\end{aligned}$$

- (a) $(x, y) = (3, 4)$ (b) $(x, y) = (-5, 1)$ (c) There are no solutions. (d) There are infinitely-many solutions.

9) Solve the following system of linear equations.

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

- (a) There are no solutions. (b) There are infinitely many solutions. (c) $(x, y) = (-1, 4)$ (d) $(x, y) = (2, 1)$

10) Solve the following system of linear equations.

$$\begin{aligned}4x - 8y &= 12 \\ -6x + 12y &= -18\end{aligned}$$

- (a) There are no solutions. (b) There are infinitely many solutions. (c) $(x, y) = (3, 3)$ (d) $(x, y) = (-2, 1)$