

## 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.

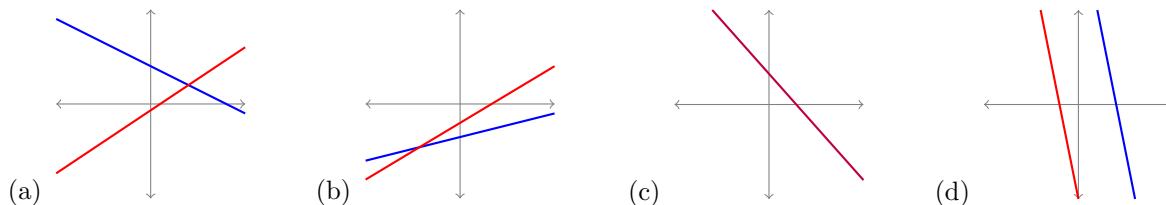
- <https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-systems-topic/cc-8th-systems-graphical/a/systems-of-equations-with-graphing>
- <https://www.khanacademy.org/math/algebra/systems-of-linear-equations/solving-systems-of-equations-v/practice-using-substitution-for-systems>

## Readiness Assurance Test

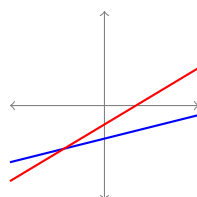
Choose the most appropriate response for each question.

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

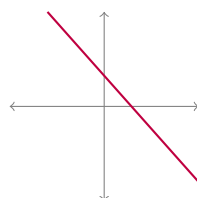
$$\begin{aligned}x + 2y &= 4 \\ 2x - 3y &= 1\end{aligned}$$



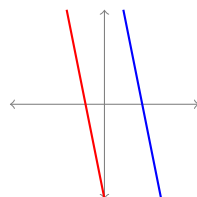
- 2) How many solutions are there for the system of linear equations represented by the following graph?



- (a) Zero                      (b) One                      (c) Two                      (d) Infinitely-many
- 3) 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
- 4) How many solutions are there for the system of linear equations represented by the following graph?  
(This graph represents two parallel lines.)



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

5) Solve the following system of linear equations.

$$y = 2x + 5$$

$$y = -x + 2$$

- (a)  $x = -1$  and  $y = 3$       (b)  $\begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = \begin{bmatrix} 4 \\ -2 \end{bmatrix}$       (c) There are no solutions.      (d) There are infinitely-many solutions.

6) Solve the following system of linear equations.

$$x + 2y = 4$$

$$2x - 3y = 1$$

- (a)  $\begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = \begin{bmatrix} -1 \\ 4 \end{bmatrix}$       (b)  $\begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = \begin{bmatrix} 2 \\ 1 \end{bmatrix}$       (c) There are no solutions.      (d) There are infinitely-many solutions.