7 CHAPTER REVIEW

7.5 Solve Special Types of Linear Systems

pp. 459–465

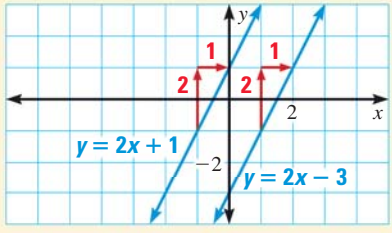
EXAMPLE

Show that the linear system has no solution.

$-2x + y = -3$ **Equation 1**
$y = 2x + 1$ **Equation 2**

Graph the linear system.

The lines are parallel because they have the same slope but different y-intercepts. Parallel lines do not intersect, so the system has no solution.



EXERCISES

EXAMPLES 1, 2, and 3 on pp. 459–461 for Exs. 25–27

Tell whether the linear system has *one solution*, *no solution*, or *infinitely many solutions*. *Explain*.

25. $x = 2y - 3$
$1.5x - 3y = 0$

26. $-x + y = 8$
$x + 8 = y$

27. $4x = 2y + 6$
$4x + 2y = 10$

7.6 Solve Systems of Linear Inequalities

pp. 466–472

EXAMPLE

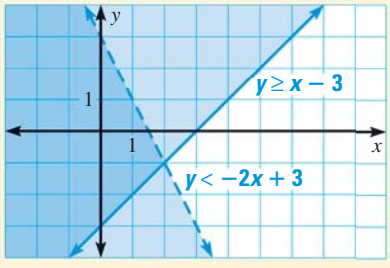
Graph the system of linear inequalities.

$y < -2x + 3$ **Inequality 1**
$y \geq x - 3$ **Inequality 2**

The graph of $y < -2x + 3$ is the half-plane *below* the *dashed* line $y = -2x + 3$.

The graph of $y \geq x - 3$ is the half-plane *on and above* the *solid* line $y = x - 3$.

The graph of the system is the intersection of the two half-planes shown as the darker shade of blue.



EXERCISES

EXAMPLES 1, 2, 3, and 4 on pp. 466–468 for Exs. 28–31

Graph the system of linear inequalities.

28. $y < x + 3$
$y > -3x - 2$

29. $y \leq -x - 2$
$y > 4x + 1$

30. $y \geq 0$
$x \leq 2$
$y < x + 4$

31. MOVIE COSTS You receive a $40 gift card to a movie theater. A ticket to a matinee movie costs $5, and a ticket to an evening movie costs $8. Write and graph a system of inequalities for the number of tickets you can purchase using the gift card.