

5.4

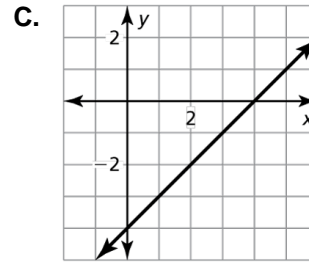
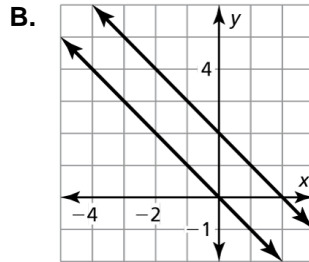
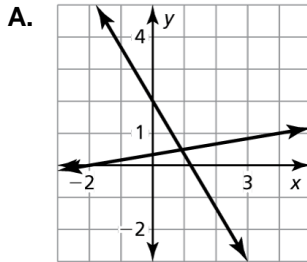
Practice A

In Exercises 1–3, match the system of linear equations with its graph. Then determine whether the system has *one solution*, *no solution*, or *infinitely many solutions*.

1. $x + y = 0$
 $3x + 3y = 6$

2. $5x + 3y = 6$
 $x - 6y = -2$

3. $-2x + 2y = -8$
 $x - y = 4$



In Exercises 4–6, solve the system of linear equations.

4. $y = 5x + 1$
 $y = 5x - 1$

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

6. $-x - 4y = 10$
 $x + 4y = -10$

In Exercises 7–9, use only the slopes and *y*-intercepts of the graphs of the equations to determine whether the system of linear equations has *one solution*, *no solution*, or *infinitely many solutions*. Explain.

7. $y = 2x - 5$
 $4x - 2y = 10$

8. $y = -5x + 3$
 $15x + 3y = -3$

9. $-x + 2y = 4$
 $2x + y = 3$

10. Describe and correct the error in solving the system of linear equations.

\times $y = -2x + 5$
 $2x + y = 5$

The lines have different slopes.
So, the system has one solution.

11. You downloaded 2 DVDs and 10 songs for \$18. Your friend downloaded 3 DVDs and 15 songs for \$27. Write a system of linear equations that represents this situation. Can you determine the price of each DVD and each song? Explain.

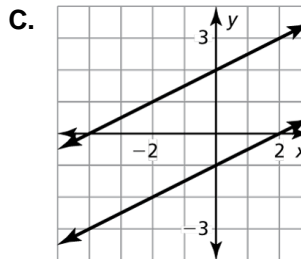
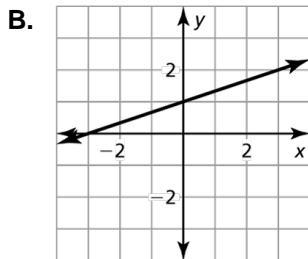
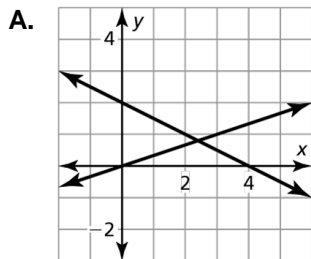
5.4 Practice B

In Exercises 1–3, match the system of linear equations with its graph. Then determine whether the system has *one solution*, *no solution*, or *infinitely many solutions*.

1. $x - 3y = -3$
 $-4x + 12y = 12$

2. $x - 3y = 0$
 $x + 2y = 4$

3. $x - 2y = -4$
 $3x - 6y = 6$



In Exercises 4–9, solve the system of linear equations.

4. $3x - 3y = 6$
 $-6x + 6y = -12$

5. $12x - 8y = 10$
 $-6x + 4y = 5$

6. $4x - 3y = 16$
 $x + y = -3$

7. $6x + 9y = -15$
 $4x + 6y = 10$

8. $-x - 4y = 10$
 $x + 4y = 10$

9. $-5x + 2y = 3$
 $10x - 4y = -6$

In Exercises 10–15, use only the slopes and *y*-intercepts of the graphs of the equations to determine whether the system of linear equations has *one solution*, *no solution*, or *infinitely many solutions*. Explain.

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

11. $-3x + 8y = 32$
 $6x - 16y = -64$

12. $2x + 2y = 2$
 $9x + 9y = 9$

13. $2x - 4y = -24$
 $3x - 6y = -24$

14. $y = -3x + 7$
 $3x + 2y = -6$

15. $5x + y = -3$
 $2y = -10x - 6$

16. Write a system of three linear equations in two variables so that two of the equations have infinitely many solutions, but the entire system has one solution.

17. Consider the system of linear equations $y = ax + 3$ and $y = \frac{1}{a}x - 2$.

- a. If possible, find a value of a so that the system of linear equations has no solution.
- b. If possible, find a value of a so that the system of linear equations has one solution.