## ACTIVITY 16 PRACTICE
Write your answers on notebook paper.
**Show your work.**

Lesson 16-1

1. Which ordered pairs are solutions of the inequality $5y - 3x \leq 7$?
   A. $(0, 0)$ **B.** $(3, 5)$
   C. $(-2, -5)$ **D.** $(1, 2.5)$
   E. $(5, -3)$

2. Apple juice costs $2 per bottle, and cranberry juice costs $3 per bottle. Tamiko has at most $18 with which to buy drinks for a club picnic. She lets x represent the number of bottles of apple juice and lets y represent the number of bottles of cranberry juice. Then she graphs the inequality $2x + 3y \leq 18$, as shown below.
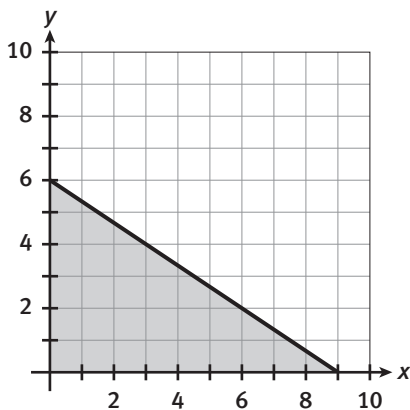

   a. Tamiko states that the graph does not help her decide how many bottles of each type of juice to buy, because there are infinitely many solutions. Do you agree or disagree? Why?
   b. Suppose Tamiko decides to buy two bottles of apple juice. Explain how she can use the graph to determine the possible numbers of bottles of cranberry juice she can buy.

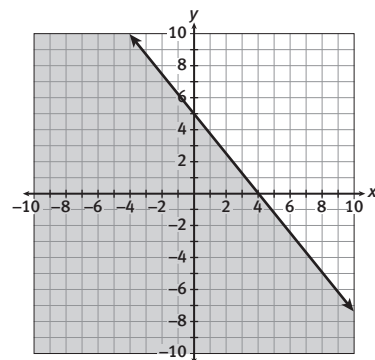3. Describe a real-world situation that can be represented by the inequality shown in the graph.
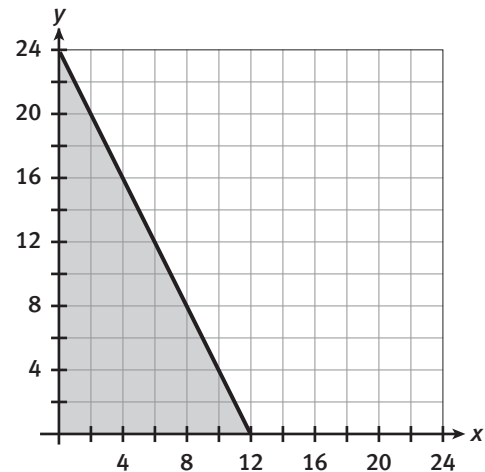
Lesson 16-2
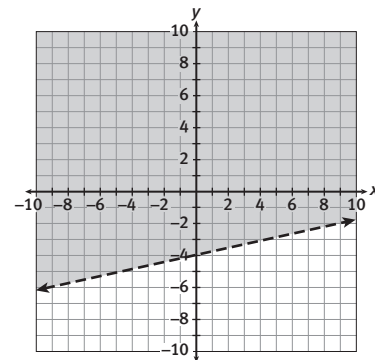
4. Write an inequality for the half-plane. Is the half-plane open or closed?

5. Write an inequality for the half-plane. Is the half-plane open or closed?

6. Sketch a graph of the inequality $y \geq -\frac{2}{5}x + 2$.

7. Sketch a graph of the inequality $3y > 7x - 15$.

8. Which inequality represents all of the points in the first and fourth quadrants?
   A. $x < 0$ **B.** $x > 0$
   C. $y < 0$ **D.** $y > 0$

9. There are at most 30 students in Mr. Moreno's history class.
   a. Write an inequality in two variables that represents the possible numbers of boys b and girls g in the class.
   b. Graph the inequality on a coordinate plane.
   c. Explain whether your graph has a solid boundary line or a dashed boundary line.
   d. Choose a point in the shaded region of your graph and explain what the point represents.

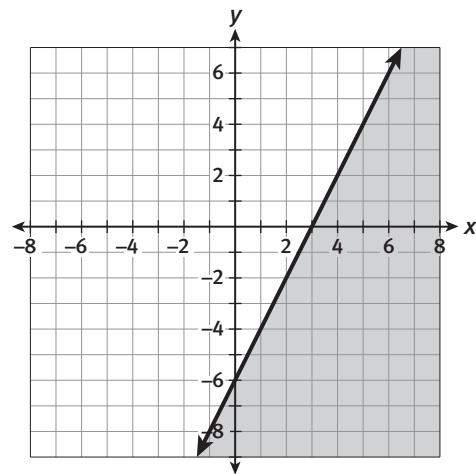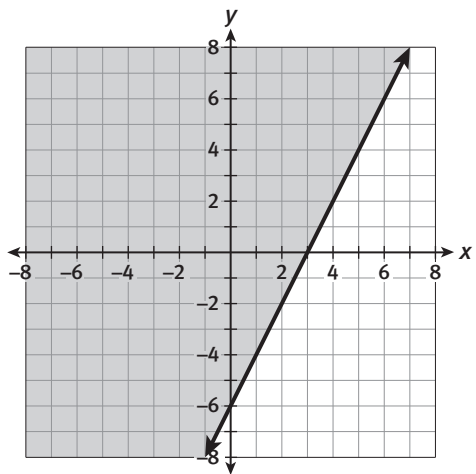10. Which graph represents the solutions of the inequality $2x - y \geq 6$?

    A.
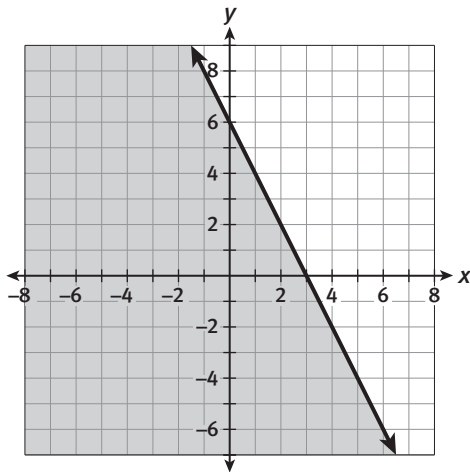
    B.
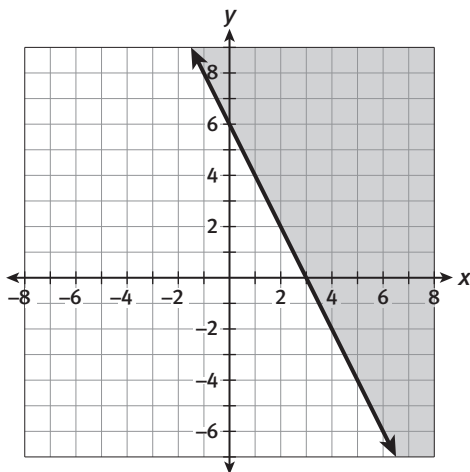
    C.

    D.

11. Tickets for the school play cost $3 for students and $6 for adults. The drama club hopes to bring in at least $450 in sales. The auditorium has 120 seats. Let a represent the number of adult tickets and s represent the number of student tickets.
    a. Write an inequality in two variables that represents the desired ticket sales.
    b. Write an inequality in two variables that represents the possible numbers of tickets that can be sold.
    c. Sketch both inequalities on the same grid. What does the intersection of the two graphs represent?

12. When is the boundary line of the graph of an inequality in two variables part of the solution?

MATHEMATICAL PRACTICES
Look For and Make Use of Structure

13. Graph the inequality $x < 3$ on a number line and on the coordinate plane. Describe the differences in the graphs.