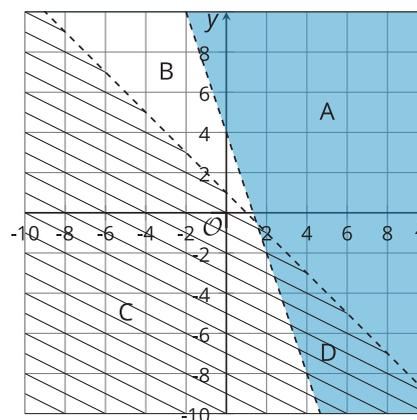


Lesson 24 Practice Problems

1. Two inequalities are graphed on the same coordinate plane.

Which region represents the solution to the system of the two inequalities?

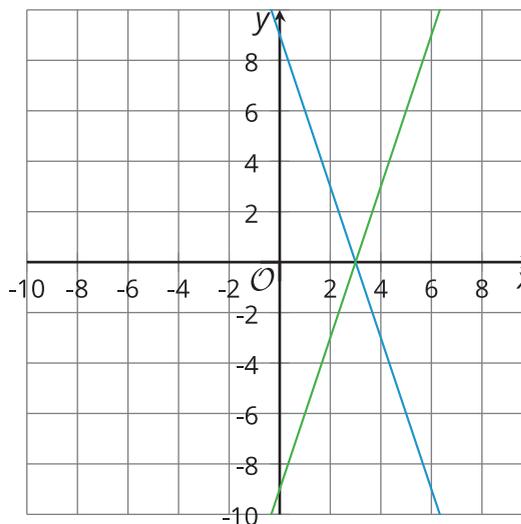


2. Select **all** the pairs of x and y that are solutions to the system of inequalities:

$$\begin{cases} y \leq -2x + 6 \\ x - y < 6 \end{cases}$$

- A. $x = 0, y = 0$
- B. $x = -5, y = -15$
- C. $x = 4, y = -2$
- D. $x = 3, y = 0$
- E. $x = 10, y = 0$
3. Jada has \$200 to spend on flowers for a school celebration. She decides that the only flowers that she wants to buy are roses and carnations. Roses cost \$1.45 each and carnations cost \$0.65 each. Jada buys enough roses so that each of the 75 people attending the event can take home at least one rose.
- Write an inequality to represent the constraint that every person takes home at least one rose.
 - Write an inequality to represent the cost constraint.

4. Here are the graphs of the equations $3x + y = 9$ and $3x - y = 9$ on the same coordinate plane.



- Label each graph with the equation it represents.
- Identify the region that represents the solution set to $3x + y < 9$. Is the boundary line a part of the solution? Use a colored pencil or cross-hatching to shade the region.
- Identify the region that represents the solution set to $3x - y < 9$. Is the boundary line a part of the solution? Use a different colored pencil or cross-hatching to shade the region.
- Identify a point that is a solution to both $3x + y < 9$ and $3x - y < 9$.

5. Which coordinate pair is a solution to the inequality $4x - 2y < 22$?

- (4, -3)
- (4, 3)
- (8, -3)
- (8, 3)

(From Unit 2, Lesson 21.)

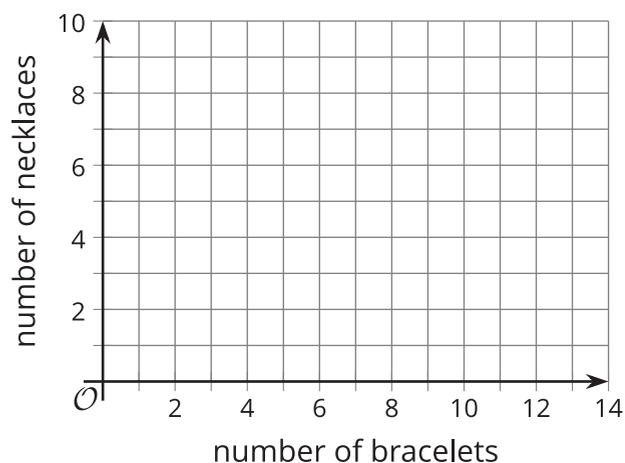
6. Consider the linear equation $9x - 3y = 12$.

- a. The pair $(3, 5)$ is a solution to the equation. Find another pair (x, y) that is a solution to the equation.
- b. Are $(3, 5)$ and $(2, -10)$ solutions to the inequality $9x - 3y \leq 12$? Explain how you know.

(From Unit 2, Lesson 21.)

7. Elena is considering buying bracelets and necklaces as gifts for her friends. Bracelets cost \$3, and necklaces cost \$5. She can spend no more than \$30 on the gifts.

- a. Write an inequality to represent the number of bracelets, b , and the number of necklaces n , she could buy while sticking to her budget.
- b. Graph the solutions to the inequality on the coordinate plane.



- c. Explain how we could check if the boundary is included or excluded from the solution set.

(From Unit 2, Lesson 22.)

8. In physical education class, Mai takes 10 free throws and 10 jump shots. She earns 1 point for each free throw she makes and 2 points for each jump shot she makes. The greatest number of points that she can earn is 30.

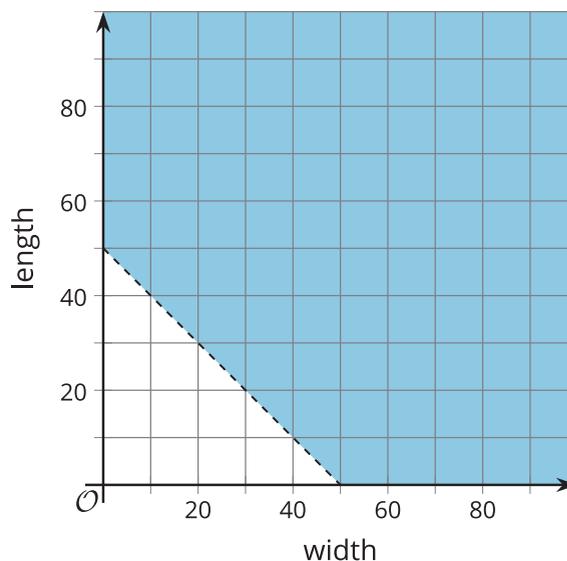
a. Write an inequality to describe the constraints. Specify what each variable represents.

b. Name one solution to the inequality and explain what it represents in that situation.

(From Unit 2, Lesson 23.)

9. A rectangle with a width of w and a length of l has a perimeter greater than 100.

Here is a graph that represents this situation.



a. Write an inequality that represents this situation.

b. Can the rectangle have width of 45 and a length of 10? Explain your reasoning.

c. Can the rectangle have a width of 30 and a length of 20? Explain your reasoning.

(From Unit 2, Lesson 23.)