

$$g = -16 (6m - 180)$$

$$g = -96m + 2880$$

rate

start value

1.) What is the rate at which the water is being transferred each minute?

96g. per m.

2.) How many gallons are in the pool to start?

A. Match each inequality with its graph.

1. $y - 3x \geq 6$

2. $x - 3y \geq 6$

3. $3x + y \leq 6$

4. $x + 3y \leq 6$

5. $y \geq -3x$

6. $y \leq -3x$

7. $x \geq -3$

8. $y \geq -3$

A. Matching the inequalities with the graphs.

1. b

2. d

3. c

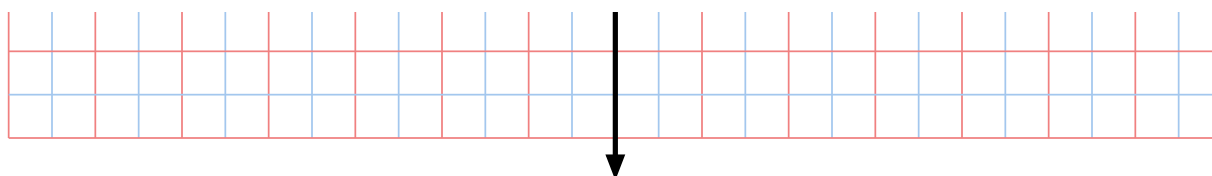
4. a

5. e

6. g

7. f

8. h



C. 1. Rewrite the inequalities in parts (1)–(4) of Question A in either $y \leq mx + b$ or $y \geq mx + b$ form.

2. Compare this form of the inequalities with their graphs. How might this form help you determine which regions should be shaded?

$$y \leq \frac{1}{3}x - 2$$

$$y \leq -\frac{1}{3}x + 2$$

1. $y - 3x \geq 6$ $y \geq 3x + 6$

3. $3x + y \leq 6$ $y \leq -3x + 6$

5. $y \geq -3x$

7. $x \geq -3$

2. $x - 3y \geq 6$ $y \geq -\frac{1}{3}x + 6$

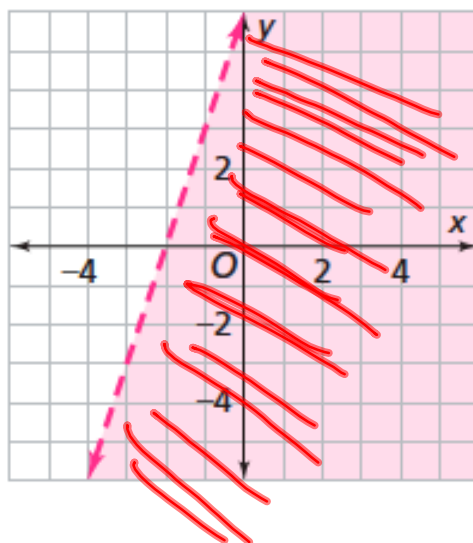
4. $x + 3y \leq 6$ $y \leq -\frac{1}{3}x + 6$

6. $y \leq -3x$

8. $y \geq -3$

$$y \leq -\frac{1}{3}x + 2$$

- B.** Describe your strategies for matching the graphs and inequalities.
- C.** 1. Rewrite the inequalities in parts (1)–(4) of Question A in either $y \leq mx + b$ or $y \geq mx + b$ form.
2. Compare this form of the inequalities with their graphs. How might this form help you determine which regions should be shaded?
- D.** Think about the inequality $y < 3x + 6$.
1. Does the pair (2, 12) satisfy the inequality? Explain.
2. Below is the graph of $y < 3x + 6$. How is this graph different from the graphs in Question A? What is the reason for this difference?



ACE Homework starts on page 78.

Systems of Linear Inequalities

Together, the two inequalities form a **system of linear inequalities.**

$$\begin{cases} -2x + y > -4 \\ 3x - 6y \geq 6 \end{cases}$$

