

**Reteaching with Practice**

For use with pages 340–345

**GOAL**

Solve multi-step linear inequalities and use linear inequalities to model and solve real-life problems

**EXAMPLE 1****Using More than One Step**Solve  $3n + 2 \leq 14$ .**SOLUTION**

$$3n + 2 \leq 14$$

Write original inequality.

$$3n \leq 12$$

Subtract 2 from each side.

$$n \leq 4$$

Divide each side by 3.

The solution is all real numbers less than or equal to 4.

**Exercises for Example 1**

Solve the inequality.

1.  $5x - 7 > -2$

2.  $9m + 2 \leq 20$

3.  $13 + 4y \geq 9$

**EXAMPLE 2****Multiplying or Dividing by a Negative Number**Solve  $11 - 2x \geq 3x + 16$ .**SOLUTION**

$$11 - 2x \geq 3x + 16$$

Write original inequality.

$$-2x \geq 3x + 5$$

Subtract 11 from each side.

$$-5x \geq 5$$

Subtract  $3x$  from each side.

$$x \leq -1$$

Divide each side by  $-5$  and reverse inequality.The solution is all real numbers less than or equal to  $-1$ .**Exercises for Example 2**

Solve the inequality.

4.  $8 > 5 - a$

5.  $-4x + 2 \leq -22$

6.  $-\frac{y}{2} + 3 \geq 0$

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### EXAMPLE 3 Writing and Using a Linear Model

You wash dishes in a restaurant and earn \$5.15 per hour. How many hours must you work to make at least \$200 to buy a new snowboard?

#### SOLUTION

<b>Verbal Model</b>	Hourly wage	·	Number of hours worked	≥	Desired income
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<b>Labels</b>	Hourly wage = 5.15	(dollars per hour)
	Number of hours worked = $x$	(hours)
	Desired income = 200	(dollars)

<b>Algebraic Model</b>	$5.15x > 200$	Write algebraic model.
	$\frac{5.15x}{5.15} > \frac{200}{5.15}$	Divide each side by 5.15.
	$x > 38.835 \dots$	

You need to work at least 39 hours.

#### Exercises for Example 3

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| 7. Rework Example 3 if you earn \$4.60 per hour. | 8. Rework Example 3 if you need to make \$240 to buy a new snowboard. |
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