identity (identidad)
inequality (desigualdad)
solution of an inequality
  (solución de una
  desigualdad)
formula (fórmula)
literal equation (ecuación
  literal)

How can you solve an equation or inequality in one variable?

EXAMPLE 1

Francine opens a savings account with $150. At the end of every week, she adds $35 to her account. After how many weeks will Francine have $360 in her saving account?

Let w represent the number of weeks Francine has been saving.

$$150 + 35w = 360$$
$$\underline{-150 \qquad\qquad -150}$$
$$35w = 210$$

$$\frac{35w}{35} = \frac{210}{35}$$

$$w = 6$$

EXAMPLE 2

A test car has a velocity of 280 miles per hour minus five times the gear setting. The track has a speed limit of 150 miles per hour. What are the gear settings that can be used for the car in this trial?

Let x equal the gear setting.

$$280 - 5x \leq 150$$
$$\underline{-280 \qquad\qquad -280}$$
$$-5x \leq -130$$

$$\frac{-5x}{-5} \geq \frac{-130}{-5}$$

$$x \geq 26$$

EXERCISES

1. Megan has $25 to buy groceries. She has $15 worth of groceries in her cart, and would like to buy some melons that cost $1.25 each. Write an equation that describes the situation, and determine how many melons Megan can afford. (Lesson 4.1)

   $25 = 15 + 1.25x$. Megan can afford 8 melons.

2. Is 20 a solution for $2x - 5 > 30$? Explain your answer. (Lesson 4.2)

   Yes. For $2x - 5 > 30$, $x > \frac{35}{2}$. 20 is greater than $\frac{35}{2}$.