

**EXAMPLE 2** TAKS PRACTICE: Multiple Choice

What is the value of x in the proportion $\frac{3}{x} = \frac{6}{x-1}$?

- (A) -2 (B) -1 (C) 1 (D) 2

Solution

→ $\frac{3}{x} = \frac{6}{x-1}$ Write or iginal proportion.

$3(x-1) = x \cdot 6$ Cross products property

$3x - 3 = 6x$ Simplify.

$-3 = 3x$ Subtract $3x$ from each side.

$-1 = x$ Divide each side by 3.

▶ The value of x is -1 . The correct answer is B. (A) (B) (C) (D)

ANOTHER WAY

Because 6 is twice 3, you can reason that $x - 1$ must be twice x :

$$x - 1 = 2x$$

$$-1 = x$$
EXAMPLE 3 Write and solve a proportion

SEALS Each day, the seals at an aquarium are each fed 8 pounds of food for every 100 pounds of their body weight. A seal at the aquarium weighs 280 pounds. How much food should the seal be fed per day?

Solution

STEP 1 Write a proportion involving two ratios that compare the amount of food with the weight of the seal.

$$\frac{8}{100} = \frac{x}{280}$$

← amount of food
← weight of seal

STEP 2 Solve the proportion.

→ $\frac{8}{100} = \frac{x}{280}$ Write proportion.

$8 \cdot 280 = 100 \cdot x$ Cross products property

$2240 = 100x$ Simplify.

$22.4 = x$ Divide each side by 100.

▶ A 280 pound seal should be fed 22.4 pounds of food per day.

ANOTHER WAY

You can also solve the proportion by multiplying each side of the equation by 280.

GUIDED PRACTICE for Examples 1, 2, and 3

Solve the proportion. Check your solution.

1. $\frac{4}{a} = \frac{24}{30}$

2. $\frac{3}{x} = \frac{2}{x-6}$

3. $\frac{m}{5} = \frac{m-6}{4}$

4. **WHAT IF?** In Example 3, suppose the seal weighs 260 pounds. How much food should the seal be fed per day?