

## 5.4 Solving Proportions

**Objectives:** 1. Solve proportions using Cross Products Property.  
2. Use a point on a graph to write and solve proportions.

### **Key Ideas: Methods for Solving Proportions**

- Method 1: Use mental math. (Section 5.3)
- Method 2: Use the Multiplication Property of Equality. (Section 3.4)
- Method 3: Use the Cross Products Property. (Section 5.4)

### EXAMPLE 1 Solving Proportions

Solve  $\frac{5}{7} = \frac{x}{21}$

### EXAMPLE 2 Solving Proportions Using the Cross Products Property

a. Solve  $\frac{x}{8} = \frac{7}{10}$

b. Solve  $\frac{9}{y} = \frac{3}{17}$

**On Your Own:**

**Solve the proportion using any method**

1.  $\frac{12}{10} = \frac{a}{15}$

2.  $\frac{y}{6} = \frac{2}{4}$

3.  $\frac{7}{2} = \frac{28}{x}$

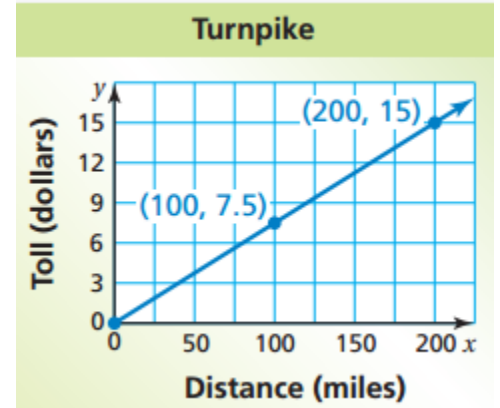
4.  $\frac{z+1}{40} = \frac{6}{15}$

### EXAMPLE 3 Real-Life Application (Unit Conversion)

The graph shows the toll  $y$  due on a turnpike for driving  $x$  miles. Your toll is \$7.50. How many kilometers did you drive?

Conversion: 1 mile = 1.61 kilometers

Method 2: Convert using a proportion.



On Your Own:

Write and solve a proportion to complete the statement. Round to the nearest hundredth, if necessary.

5.  $7.5 \text{ in.} \approx \square \text{ cm}$

Conversion: 1 in = 2.54 cm

6.  $2 \text{ L} \approx \square \text{ qt}$

Conversion: 1 L = 1.06 qt