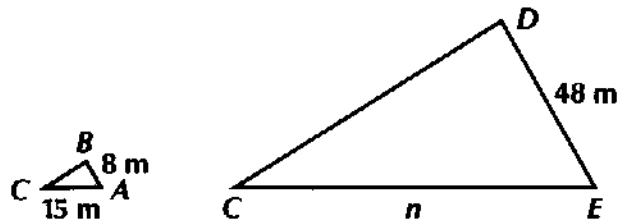
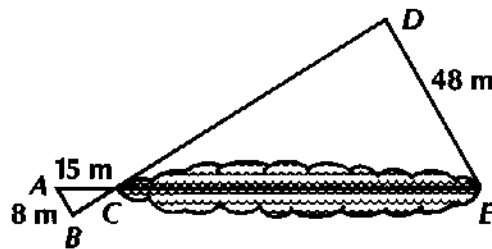


# Finding Distances by Using Similar Triangles

## Correctly Setting Up Proportions

Find the distance across the swamp if triangles  $ABC$  and  $EDC$  are similar.



Draw the two triangles next to each other to see the relationships.  $\overline{AB}$  corresponds to  $\overline{ED}$ .  $\overline{AC}$  corresponds to  $\overline{EC}$ .

$$\frac{\text{side } AB}{\text{side } ED} = \frac{\text{side } AC}{\text{side } EC}$$

Let  $n$  = the length of side  $EC$

$$\frac{8}{48} = \frac{15}{n}$$

$$8 \times n = 48 \times 15 \quad \text{Solve the proportion.}$$

$$8n = 720$$

$$\frac{8n}{8} = \frac{720}{8}$$

$$n = 90$$

side  $EC$  = 90 meters

It is 90 meters across the swamp.

Triangles  $JKL$  and  $MNQ$  are similar. Choose the correct answer.

1. Which side of  $\triangle JKL$  corresponds to  $\overline{NQ}$ ?

- a.  $\overline{JL}$                       b.  $\overline{JK}$                       c.  $\overline{KL}$                       \_\_\_\_\_

2. Which side of  $\triangle MNQ$  corresponds to  $\overline{JK}$ ?

- a.  $\overline{NQ}$                       b.  $\overline{MN}$                       c.  $\overline{MQ}$                       \_\_\_\_\_

3. Which proportion can be used to find  $\overline{MN}$ ?

- a.  $\frac{\overline{MN}}{\overline{JK}} = \frac{\overline{MQ}}{\overline{JL}}$                       b.  $\frac{\overline{MN}}{\overline{NQ}} = \frac{\overline{JL}}{\overline{KL}}$                       c.  $\frac{\overline{KL}}{\overline{MN}} = \frac{\overline{JL}}{\overline{MQ}}$                       \_\_\_\_\_

4. If  $\overline{JL} = 6$  m,  $\overline{KL} = 7$  m, and  $\overline{NQ} = 14$  m, find  $\overline{MQ}$ .

- a. 10 m                      b. 12 m                      c. 16.3 m                      \_\_\_\_\_

