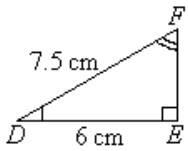
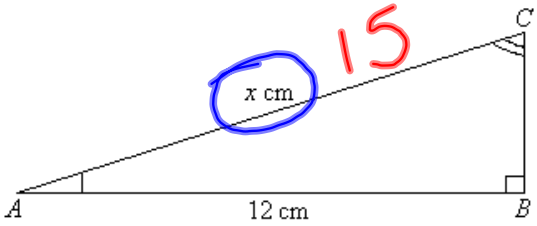
Warm-Up

1. **Are the triangles similar? How do you know?**

2. **Solve for x**





$\angle F = \angle C$

$\angle D = \angle A$

$\angle E = \angle B$

$\triangle FDE \sim \triangle CAB$

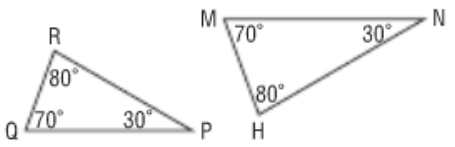
$\frac{AC}{DF} = \frac{AB}{DE}$

$\frac{x}{7.5} = \frac{12}{6}$ (7.5)

$x = 15$

4. Which triangles in each pair are similar?
How do you know?

a)

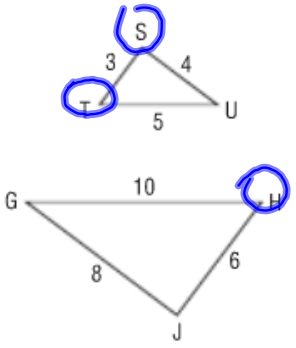


$\angle R = \angle H$

$\angle P = \angle N$

$\angle Q = \angle M$ $\triangle RPQ \sim \triangle HNM$

b)



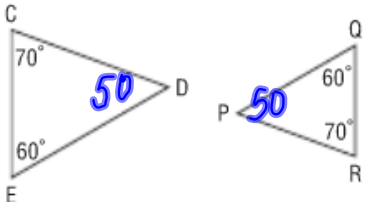
Shortest

$\frac{ST}{JH} = \frac{SU}{JG} = \frac{TU}{HG}$

$\frac{3}{6} = \frac{4}{8} = \frac{5}{10}$

$\triangle STU \sim \triangle JHG$

c)



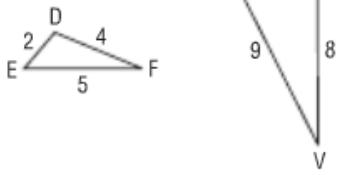
$\angle C = \angle R$

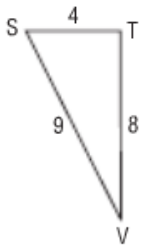
$\angle D = \angle P$

$\angle E = \angle Q$

$\triangle CDE \sim \triangle RPQ$

d)

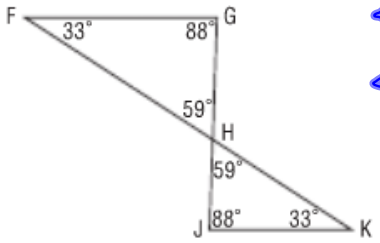




Not

5. In each diagram, identify two similar triangles. Explain why they are similar.

a)



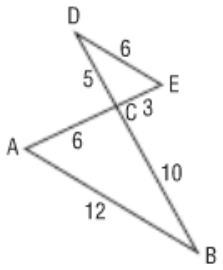
$\angle F = \angle K$

$\angle G = \angle J$

$\angle H = \angle H$

$\Delta FGH \sim \Delta KJH$

b)



shortest

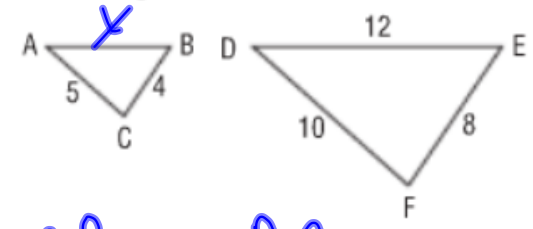
$\frac{CE}{CA} = \frac{DC}{BC} = \frac{DE}{BA}$

$\frac{3}{6} = \frac{5}{10} = \frac{6}{12}$

$\Delta CED \sim \Delta CAB$

6. Determine the length of AB in each pair of similar triangles.

a)

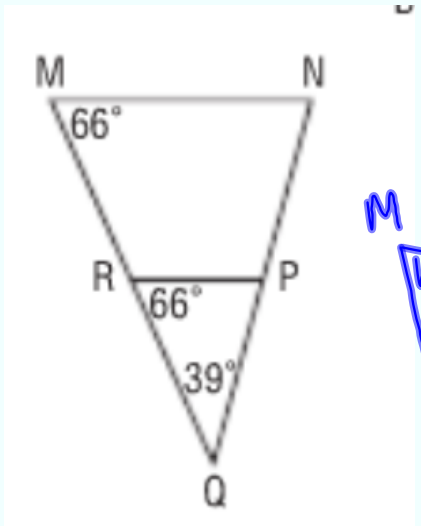


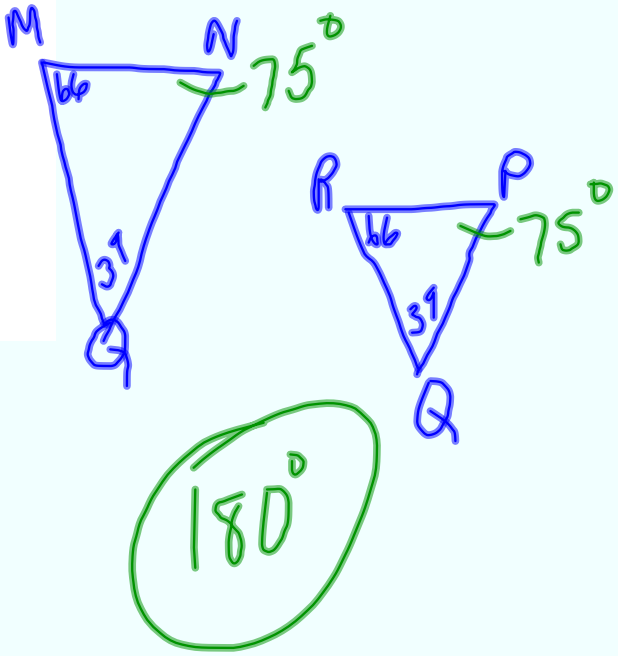
$$\frac{AB}{DE} = \frac{AC}{DF}$$

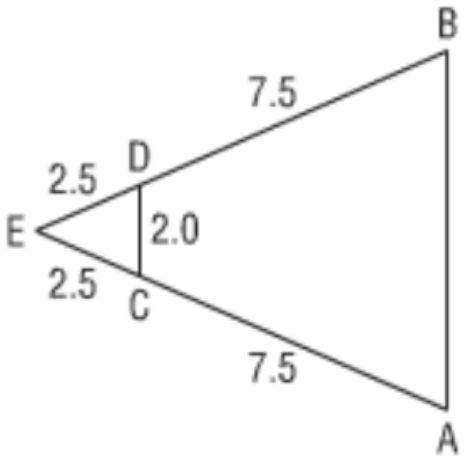
$$\frac{x}{12} = \frac{5}{10}$$

$$x = 6$$

Draw the two triangles separately!



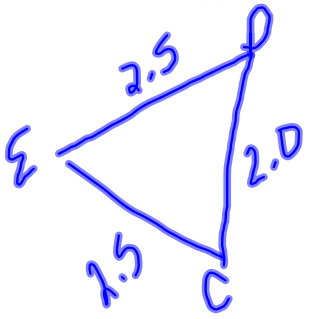


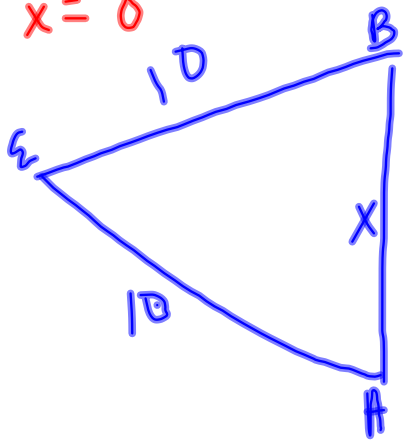


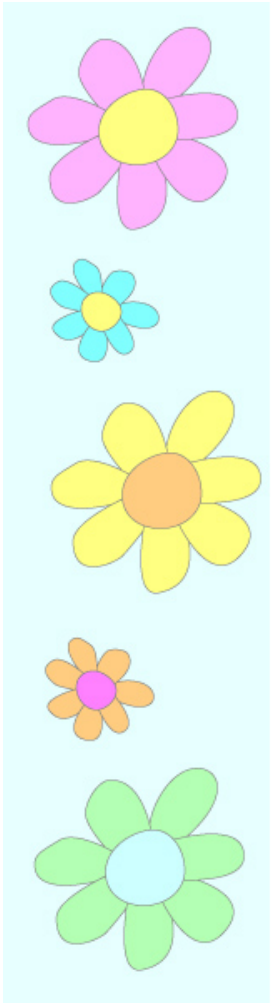
$$\frac{AB}{CD} = \frac{BE}{DE}$$

$$\frac{x}{2} = \frac{10}{2.5}$$

$$x = 8$$



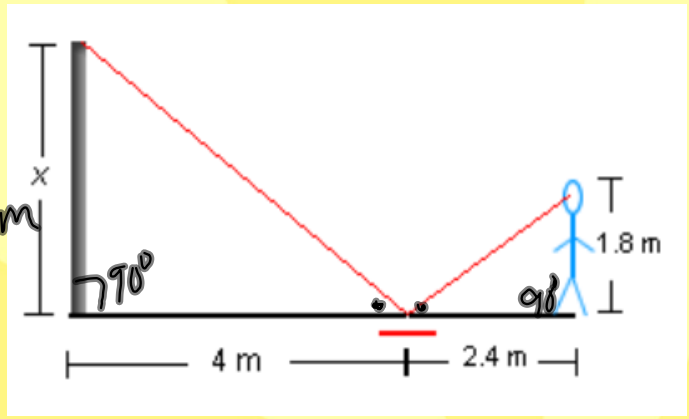




Using Similar Triangles to Solve Problems...

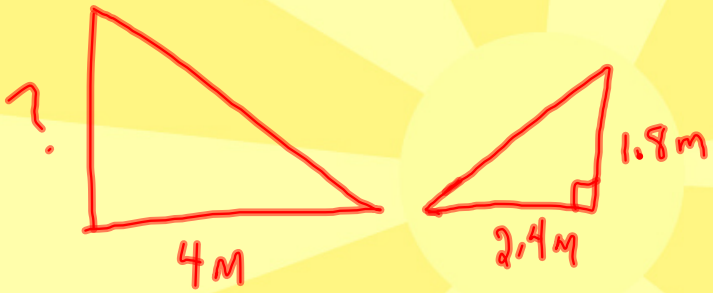
Solve for x...

Using shadows to find heights

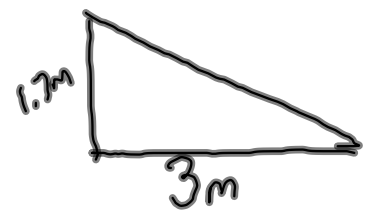


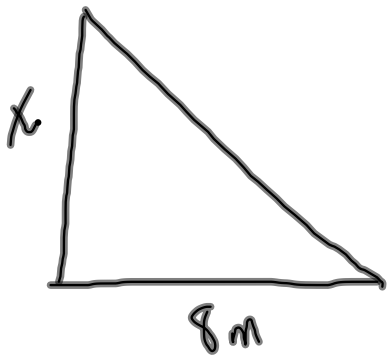
$$\frac{?}{1.8} = \frac{4}{2.4}$$

$$x = 3m$$



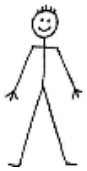
George is 1.7 m tall. His shadow is 3 m long. He is standing beside a tree that has a shadow that is 8 m long. How tall is the tree? Sketch



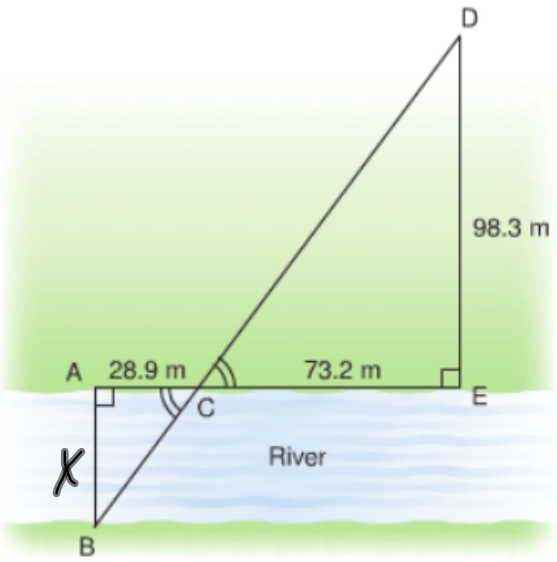


$$\frac{x}{1.7} = \frac{8}{3}$$

$$x = 4.53\text{m}$$



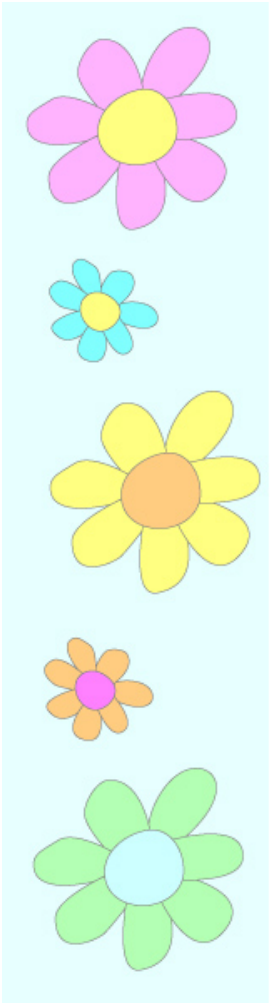
Find the distance across the river



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

$$\frac{x}{98.3} = \frac{28.9}{73.2}$$

$$x = 38.81 \text{ m}$$



Homework Pg 350, 351

7, 9, 10, 11, 12

Short Quiz on sections 7.1-7.4