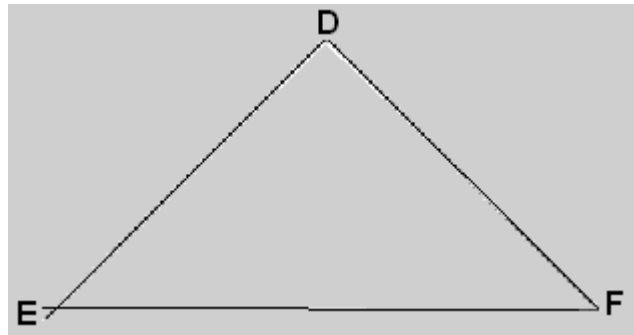
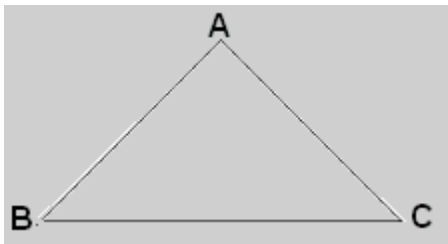
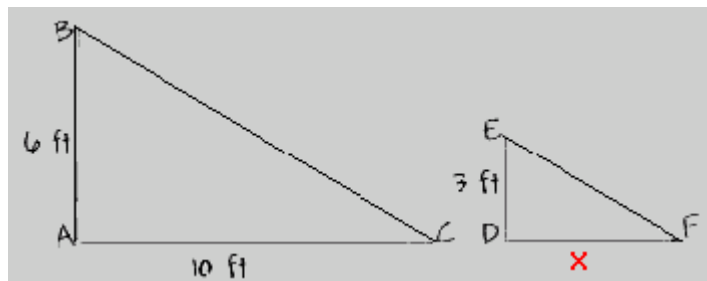


# Similar Triangles



If two shapes are similar, one is an enlargement of the other. This means that the two shapes will have the same angles and their sides will be in the same proportion.

If you know that two objects are similar, you can use proportions and cross products to find the length of an unknown side. Let's find the length of side DF, labeled x.



We can write a proportion, like this:

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

"AC is to AB as DF is to DE."  
Now, substitute in the lengths of the sides

$$\frac{AC}{AB} = \frac{DF}{DE} \rightarrow \frac{10 \text{ ft}}{6 \text{ ft}} = \frac{x}{3 \text{ ft}}$$

Take the cross product to get the equation.

$$10 \text{ ft} \cdot 3 \text{ ft} = 6 \text{ ft} \cdot x$$

Solve the equation.

$$10 \text{ ft} \cdot 3 \text{ ft} = 6 \text{ ft} \cdot x$$

$$\frac{30 \text{ ft}^2}{6 \text{ ft}} = x$$

$$5 \text{ ft} = x$$

$$DF = 5 \text{ ft}$$