

## 10.6 Using Proportions with Similar Polygons

Name \_\_\_\_\_

1. Use the information provided to draw a picture below. Then find the length of the missing side.

$$\triangle DEF \sim \triangle UVW$$

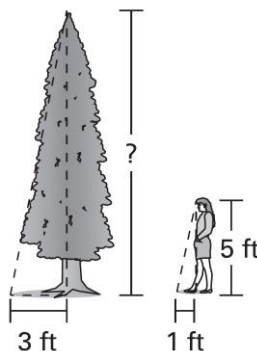
$$\overline{DE} = 36mm$$

$$\overline{UV} = 15mm$$

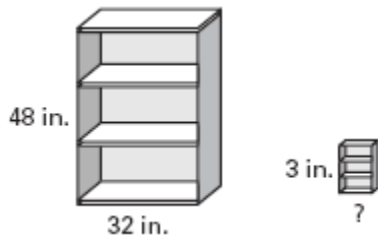
$$\overline{VW} = 10mm$$

$$\overline{EF} = \underline{\hspace{2cm}}$$

2. A statue of George Washington casts a shadow 24 feet long. A 3 foot tall bush next to the statue casts a shadow 4 feet long. How tall is the statue of George Washington?
3. A barn is casting an 8 foot long shadow. A 4 foot tall fence post next to the barn is casting a shadow that is 1 foot long. How tall is the barn?
4. A girl who is 5 feet tall stands next to a tree and casts a shadow that is 1 foot long. At the same time, the shadow of the tree is 3 feet long. How tall is the tree?



5. You are creating a model of a bookcase for a dollhouse. The actual bookcase is 48 inches tall and 32 inches wide. If you plan to make the model 3 inches tall, how wide do you have to make the model if you want the rectangular shapes of the bookcases to be similar figures?



6. A person who is 6 feet tall stands next to a tree and casts a shadow that is 2 feet long. At the same time, the shadow of the tree is 6 feet long. How tall is the tree?
7. A person who is 5.5 feet tall stands next to a tree and casts a shadow that is 2 feet long. At the same time, the shadow of the tree is 8 feet long. How tall is the tree?
8. You are creating a model of a room for a design project. The floor of the actual room is 12.5 feet wide and 15 feet long. You want the floor of your model to be similar to the actual room. If you decide to make the model 1.5 feet long, what will be the width of the model?

9. Find the unknown length given that  $ACDF \sim ABEG$ .

