



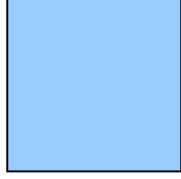



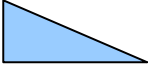
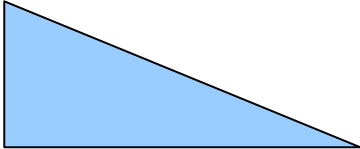




Area of Similar Figures Investigation

Consider the following similar figures. For each pair:

- Find the scale factor of the side lengths.
(How many times bigger or smaller are the sides?)
- Find the scale factor of the areas.
(How many times bigger or smaller are the areas?)

Side Length Scale Factor	Area Scale Factor	Figure 1	Figure 2
$\frac{10}{4} = \frac{5}{2}$	$\frac{50}{8} = \frac{25}{4}$	<p>10 in.</p>  <p>Area = 50 in²</p>	<p>4 in.</p>  <p>Area = 8 in²</p>
$\frac{1}{4}$	$\frac{5}{80} = \frac{1}{16}$	<p>1 cm.</p>  <p>Area = 5 cm²</p>	<p>4 cm.</p>  <p>Area = 80 cm²</p>
$\frac{10}{5} = 2$	$\frac{80}{20} = 4$	<p>10 m</p>  <p>Area = 80 m²</p>	<p>5 m</p>  <p>Area = 20 m²</p>
$\frac{5}{2}$	$\frac{75}{12} = \frac{25}{4}$	<p>5 cm</p>  <p>Area = 75 cm²</p>	<p>2 cm</p>  <p>Area = 12 cm²</p>

$\frac{4}{12} = \frac{1}{3}$	$\frac{6}{54} = \frac{1}{9}$	 4 in. Area = 6 in ²	 12 in. Area = 54 in ²
$\frac{6}{4} = \frac{3}{2}$	$\frac{45}{20} = \frac{9}{4}$	 6 ft Area = 45 ft ²	 4 ft Area = 20 ft ²

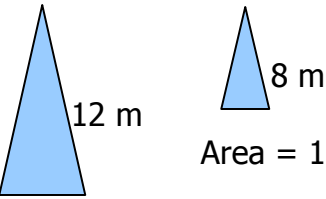
1. What do you notice about the relationship between side length scale factor and the area scale factor?

$$ASF = (SLSF)^2 = SLSF \bullet SLSF$$

Class Rule:

2. Use what you just found regarding the relationship of side length scale factor and area scale factor to find a missing area in each pair of similar figures below.

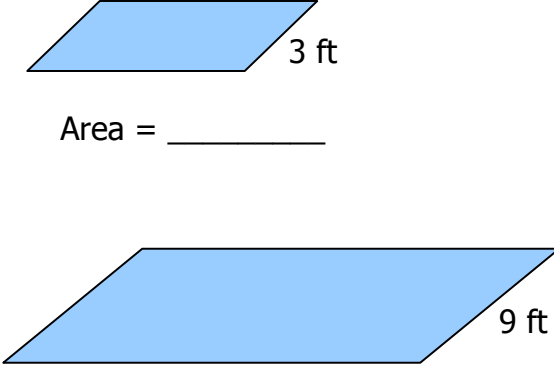
a.



12 m
Area = _____
36 m²

8 m
Area = 16 m²

b.



3 ft
Area = _____

9 ft
Area = 100 ft²

$$\frac{100}{9} ft^2 = 11 \frac{1}{9} ft^2$$

How can we check to see if the areas that we found are correct?