9.3 Area of Similar Polygons
Geometry

Determine the ratio of the areas, given the ratio of the sides of a polygon.

1. $\frac{3}{5}$ 2. $\frac{1}{4}$ 3. $\frac{7}{2}$ 4. $\frac{6}{11}$

Determine the ratio of the sides of a polygon, given the ratio of the areas.

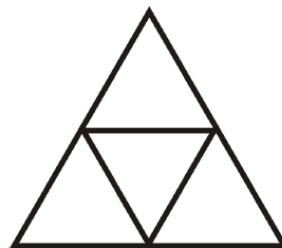5. $\frac{1}{36}$ 6. $\frac{4}{81}$ 7. $\frac{49}{9}$ 8. $\frac{25}{144}$

Answer the following questions using the triangle below.

9. What is the ratio of the areas of the large
triangle to one of the small triangles?

10. What is the scale factor of the large triangle
to the small triangle?

11. If the area of the large triangle is 20 units², what is the area of a small triangle? (Hint: Use the scale factor from above.)

12. Two rectangles are similar with a scale factor of $\frac{4}{7}$. If the area of the larger rectangle is 294 in², find the area of the smaller rectangle.

13. Two triangles are similar with a scale factor of $\frac{1}{3}$. If the area of the smaller triangle is 22 ft², find the area of the larger triangle.

14. The ratio of the areas of two similar squares is $\frac{16}{81}$. If the length of a side of the smaller square is 24 units, find the length of a side in the larger square.

15. The ratio of the areas of two right triangles is $\frac{2}{3}$. If the length of the hypotenuse of the larger triangle is 48 units, find the length of the smaller triangle's hypotenuse.