4.7 Perimeter/Area of Similar Solids
4.7 Explore Similar Solids
Pre-AP Geometry

Name _____
Period _____ Date _____

EVALUATE

Directions: All work must be shown to receive full credit. Figures are not drawn to scale.

1. Two similar cylinders have lateral areas 81π m^2 and 144π m^2. Find the ratios of:

   a. the heights

   b. the surface areas

   c. the volumes

2. Two similar pyramids have volumes 3 in^3 and 375 in^3. Find the ratios of:

   a. the slant heights

   b. the base areas

   c. the surface areas

3. Two similar cones have radii of 4 cm and 6 cm. The surface area of the smaller cone is 36π cm^2. Find the surface area of the larger cone.

4. Two similar cones have volumes 12π cm^3 and 96π cm^3. The lateral area of the smaller cone is 15π cm^2. Find the lateral area of the larger cone.

5. Two similar pyramids have lateral areas 8 ft^2 and 18 ft^2. The volume of the larger pyramid is 108 ft^3. Find the volume of the smaller pyramid.

6. The base areas of two similar prisms are 32 cm^2 and 200 cm^2. The height of the smaller prism is 7 cm. Find the volume of the larger prism.

7. A cone and a hemisphere have the same height and base. What is the ratio of their volume?

8. A cylindrical water tank will hold 1000 gallons of water. Another tank has a radius and height that are 3 times those of the first tank. How many gallons will the larger tank hold?

9. An ice-cream carton has a volume of 64 fluid ounces. A second ice-cream carton has dimensions that are $\frac{3}{4}$ the size of the larger carton. Which is the volume of the smaller carton?

10. The radius of Sphere B is eight times that of Sphere A.

    a) What effect does it have on the surface area of the Sphere B?

    b) What effect does it have on the volume of the Sphere B?