

Name \_\_\_\_\_

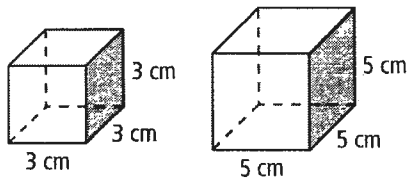
*Answers*

Date \_\_\_\_\_

# 11.7 – Exploring Similar Solids

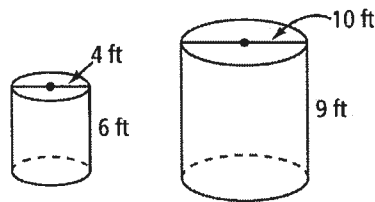
Are the two figures similar? If so, give the scale factor of the first figure to the second figure.

1)



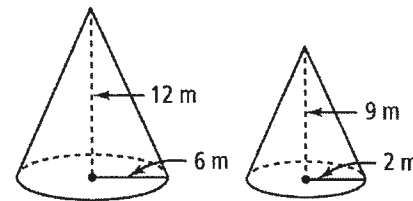
*Yes,  $\frac{3}{5}$*

2)



*No. Dimensions are not proportional*

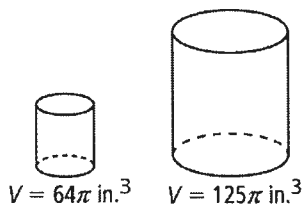
3)



*No. Dimensions are not proportional*

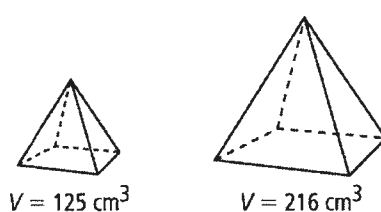
Each pair of figures is similar. Use the given information to find the scale factor of the smaller figure to the larger figure.

4)



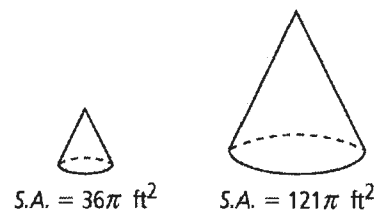
*$\frac{4}{5}$*

5)



*$\frac{5}{6}$*

6)



*$\frac{6}{11}$*

- 7) A shipping box holds 350 golf balls. A larger shipping box has dimensions triple the size of the other box. How many golf balls does the larger box hold?

*9450 golf balls*

The surface areas of two similar figures are given. The volume of the larger figure is given. Find the volume of the smaller figure.

8) S.A. =  $36 \text{ m}^2$   
 S.A. =  $225 \text{ m}^2$   
 $V = 750 \text{ m}^3$

$48 \text{ m}^3$

9) S.A. =  $108 \text{ in.}^2$   
 S.A. =  $192 \text{ in.}^2$   
 $V = 1408 \text{ in.}^3$

$594 \text{ in.}^3$

The volumes of two similar figures are given. The surface area of the smaller figure is given. Find the surface area of the larger figure.

10)  $V = 8 \text{ m}^3$   
 $V = 27 \text{ m}^3$   
 S.A.  $36 = \text{m}^2$

$81 \text{ m}^2$

11)  $V = 125 \text{ in.}^3$   
 $V = 216 \text{ in.}^3$   
 S.A. =  $200 \text{ in.}^2$

$288 \text{ in.}^2$

- 12) A cylindrical thermos has a radius of 2 in. and is 5 in. high. It holds 10 fl oz. To the nearest ounce, how many ounces will a similar thermos with a radius of 3 in. hold?

$34 \text{ fl. oz.}$

- 13) A small, spherical hamster ball has a diameter of 8 in. and a volume of about  $268 \text{ in.}^3$ . A larger ball has a diameter of 14 in. Estimate the volume of the larger hamster ball.

$1437 \text{ in.}^3$

14) Two similar pyramids have heights 6 m and 9 m.

a) What is their scale factor?

$$\frac{2}{3}$$

b) What is the ratio of their surface areas?

$$\frac{4}{9}$$

c) What is the ratio of their volumes?

$$\frac{8}{27}$$

15) The lateral area of two similar cylinders is  $64 \text{ m}^2$  and  $144 \text{ m}^2$ . The volume of the larger cylinder is  $216 \text{ m}^3$ . What is the volume of the smaller cylinder?

$$64 \text{ m}^3$$

16) The volumes of two similar prisms are  $135 \text{ ft}^3$  and  $5000 \text{ ft}^3$ .

a) Find the ratio of their heights.

$$\frac{3}{10}$$

b) Find the ratio of the area of their bases.

$$\frac{9}{100}$$