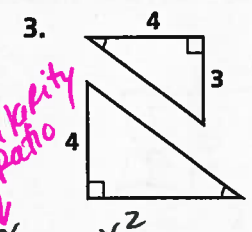
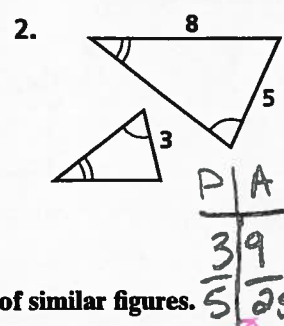
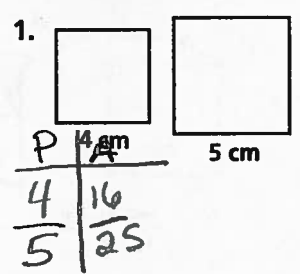


Practice 10-4

Perimeters and Areas of Similar Figures

For each pair of similar figures, find the ratio of the perimeters and the ratio of the areas.



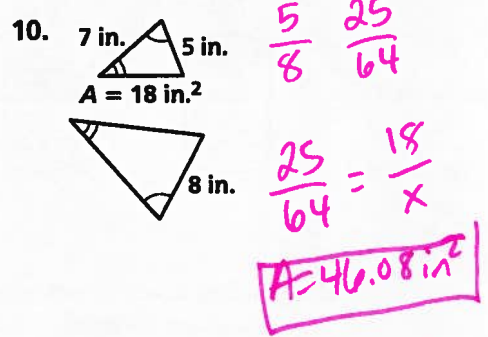
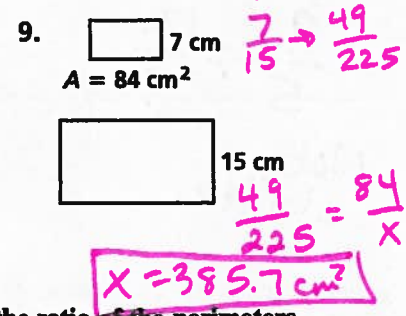
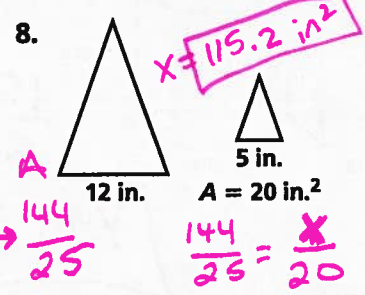
P	A
3	9
4	16

Find the similarity ratio of each pair of similar figures.

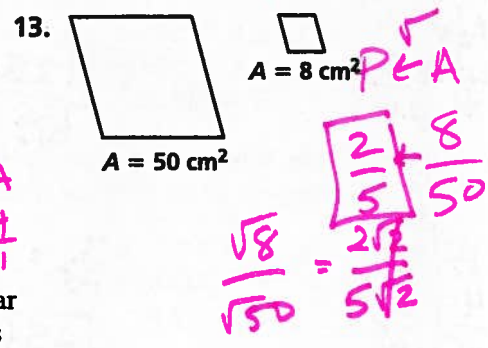
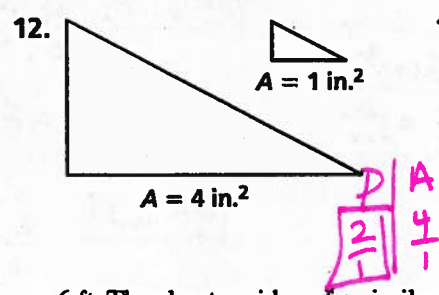
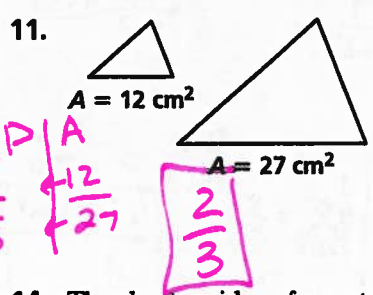
- two regular hexagons with areas 8 in.^2 and 32 in.^2
- two squares with areas 81 cm^2 and 25 cm^2
- two triangles with areas 10 ft^2 and 360 ft^2
- two circles with areas $128\pi \text{ cm}^2$ and $18\pi \text{ cm}^2$

P	A
$\frac{2}{4} = \frac{1}{2}$	$\frac{8}{32}$
$\frac{9}{25}$	$\frac{81}{25}$
$\frac{10}{360}$	$\frac{10}{360}$
$\frac{128\pi}{18\pi}$	$\frac{128\pi}{18\pi}$

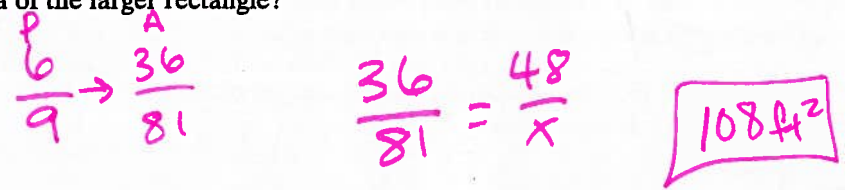
For each pair of similar figures, the area of the smaller figure is given. Find the area of the larger figure.



For each pair of similar figures, find the ratio of the perimeters.



14. The shorter sides of a rectangle are 6 ft. The shorter sides of a similar rectangle are 9 ft. The area of the smaller rectangle is 48 ft^2 . What is the area of the larger rectangle?



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Practice 11-7

Areas and Volumes of Similar Solids

The figures in each pair are similar. Use the given information to find the similarity ratio of the smaller figure to the larger figure.

$$\frac{P}{9} \mid \frac{A}{81} \mid \frac{V}{729}$$

1.



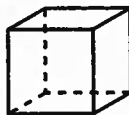
$$\frac{7}{9}$$

S.A. = 49 cm²

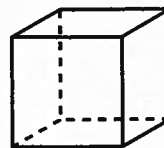


S.A. = 81 cm²

2.



V = 125 in.³

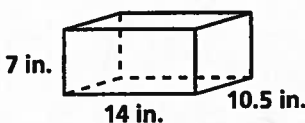


V = 512 in.³

$$\frac{P}{5} \mid \frac{A}{8} \mid \frac{V}{125}$$

Are the two solids in each pair similar? If so, give the similarity ratio. If not, write *not similar*.

3.

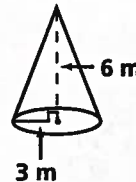


$$\frac{7}{4} = \frac{14}{8} = \frac{10.5}{6}$$



Yes; $\frac{7}{4}$

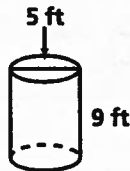
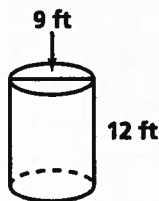
4.



$$\frac{8}{6} = \frac{4}{3}$$

Yes; $\frac{4}{3}$

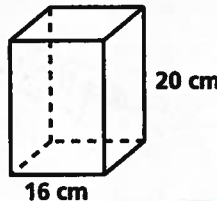
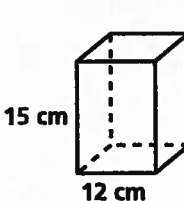
5.



$$\frac{9}{5} \neq \frac{12}{9}$$

Not Similar

6.



$$\frac{15}{20} = \frac{12}{16} = \frac{3}{4}$$

Yes; $\frac{3}{4}$

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

7. S.A. = 25 cm²
S.A. = 36 cm²
V = 216 cm³

$$\frac{25}{36} = \frac{V}{216}$$

125 cm³

8. S.A. = 16 in.²
S.A. = 25 in.²
V = 500 in.³

$$\frac{16}{25} = \frac{500}{V}$$

1250 in.³

9. S.A. = 72 ft²
S.A. = 98 ft²
V = 686 ft³

$$\frac{72}{98} = \frac{686}{V}$$

432 ft³

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 ft³
V = 125 ft³
S.A. = 4 ft²

$$\frac{8}{125} = \frac{4}{S.A.}$$

25 ft²

11. V = 40 m³
V = 135 m³
S.A. = 40 m²

$$\frac{40}{135} = \frac{40}{S.A.}$$

135 m²

13. A cone-shaped pile of sand weighs 250 lb. How much does a similarly shaped pile of sand weigh if each dimension is six times as large?

14. A block of ice weighs 2 lb. How much does a similarly shaped block of ice weigh if each dimension is twice as large?

$$\frac{P}{615} \mid \frac{A}{3615} \mid \frac{V}{216}$$

$$\frac{P}{512} \mid \frac{A}{25} \mid \frac{V}{125}$$

$$\frac{P}{250} \mid \frac{A}{1} \mid \frac{V}{6}$$

$$\frac{P}{6} \mid \frac{A}{36} \mid \frac{V}{216}$$

$$\frac{P}{1} \mid \frac{A}{4} \mid \frac{V}{101}$$

$$\frac{1}{4} = \frac{150}{X}$$