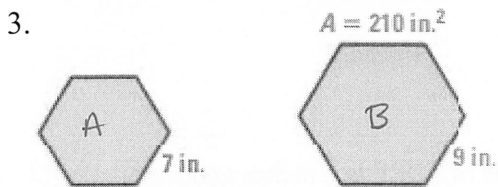


1. Complete the table of ratios for similar polygons.

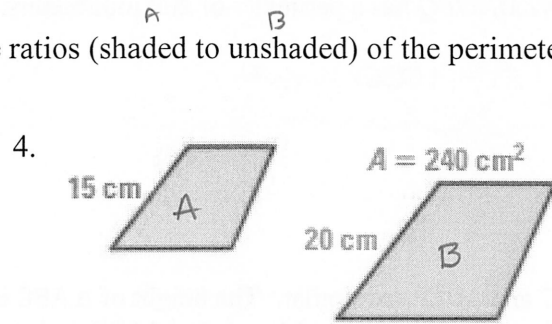
Ratio of corresponding side lengths	Ratio of Perimeters	Ratio of Areas
6:11	6:11	36:121
5:9	20:36 = 5:9	25:81
8:9	8:9	64:81
7:4	7:4	98:32 = 49:16

2. Two regular n-gons are similar. The ratio of their side lengths are 3:4. Do you need to know the number of sides to find the ratio of the perimeters or the ratio of the areas of the polygons? *Explain.*

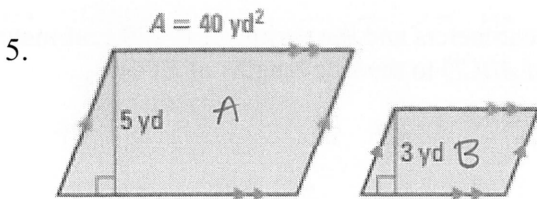
Corresponding lengths in similar figures are given. Find the ratios (shaded to unshaded) of the perimeters and areas. Find the unknown area.



$A = 127.04 \text{ in}^2$

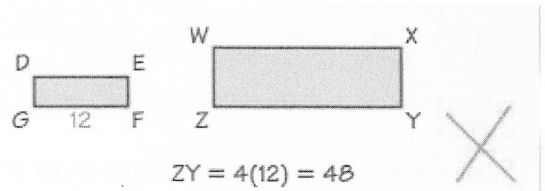


$A = 135 \text{ cm}^2$



$A = 14.4 \text{ yd}^2$

6. In the diagram, rectangles DEFG and WXYZ are similar. The ratio of the area of DEFG to the area of WXYZ is 1:4. Describe and correct the error in finding ZY.



$ZY = 24$  explain why

The ratio of the areas of two similar figure is given. Write the ratio of the lengths of corresponding sides.

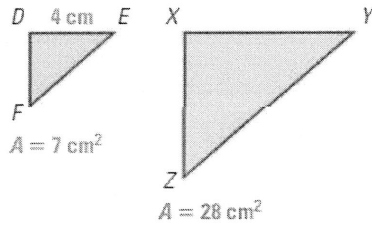
7. Ratio of Areas = 49:169  
 $7:13$

8. Ratio of Areas = 16:121  
 $4:11$

9. Ratio of Areas = 18:24  
 $\sqrt{3}:2$

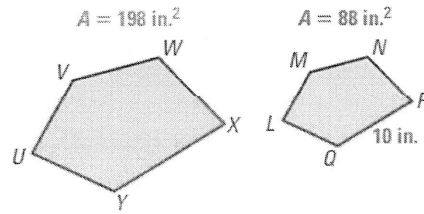
Use the given area to find XY.

10.  $\triangle DEF \sim \triangle XYZ$



$x = 8 \text{ cm}$

11.  $VWXY \sim LMNPQ$



$x = 15 \text{ in}$

12. Regular octagon  $ABCDEFGH$  has a side length of 10 millimeters and an area of 160 square millimeters. Regular octagon  $JKLMNO P Q$  has a perimeter of 200 millimeters. Find its area.

$A = 1000 \text{ mm}^2$

13.  $\triangle ABC$  and  $\triangle DEF$  are similar. The height of  $\triangle ABC$  is 42 inches. The base of  $\triangle DEF$  is 7 inches and the area is 42 square inches. Find the ratio of the area of  $\triangle ABC$  to the area of  $\triangle DEF$ .

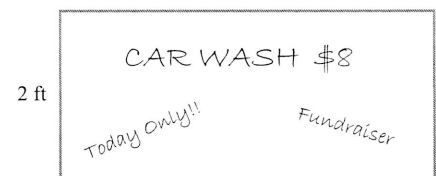
Area Ratio =  $\frac{49}{4}$

14. Rectangles  $ABCD$  and  $EFGH$  are similar. The width of  $ABCD$  is 18 centimeters and the perimeter is 120 centimeters. The length of  $EFGH$  is 91 centimeters. Find the ratio of the side lengths of  $ABCD$  to the side lengths of  $EFGH$ .

Side Ratio =  $\frac{6}{13}$

15. Your school had a car wash to raise money. A poster that was used to attract customers is shown. You decide that you will have the car wash again next year. You will have a similar poster but you will increase the length to 6 feet to try to attract more customers. Find the area of the new poster.

$A = 18 \text{ ft}^2$



4 ft