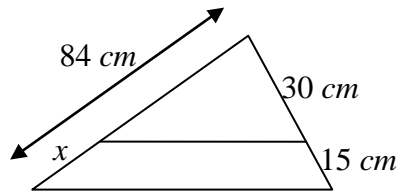


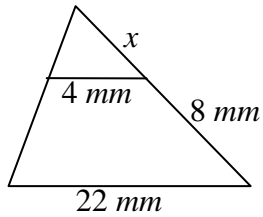
Chapter 8 Extra Problems Worksheet

Find the value of x . The triangles in each are similar.

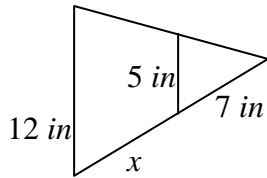
1.



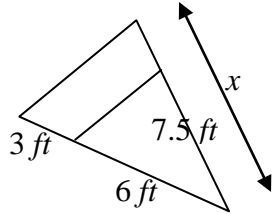
2.



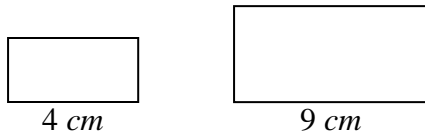
3.



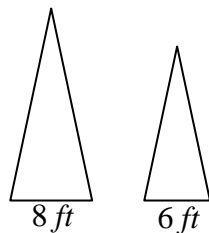
4.



5. For the similar rectangles, give the ratios (smaller to larger) of the perimeters and of the areas.



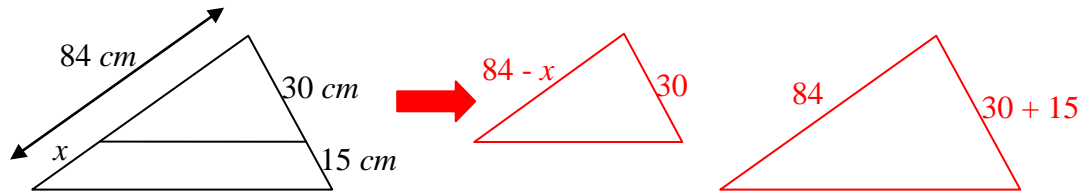
6. The triangles below are similar. The area of the larger triangle is 48 ft^2 . Find the area of the smaller triangle.



Chapter 8 Extra Problems Worksheet

Find the value of x . The triangles in each are similar.

1.



$$\frac{84-x}{84} = \frac{30}{30+15} = \frac{30}{45} = \frac{2}{3}$$

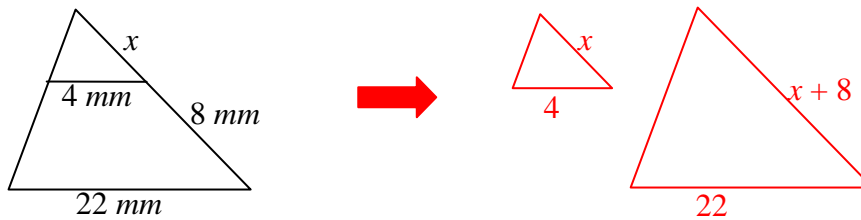
$$\frac{84-x}{84} = \frac{2}{3}$$

$$3(84-x) = 2 \cdot 84 = 168$$

$$84-x = 56$$

$$x = 28 \text{ cm}$$

2.



$$\frac{x}{x+8} = \frac{4}{22} = \frac{2}{11}$$

$$\frac{x}{x+8} = \frac{2}{11}$$

$$11x = 2(x+8)$$

$$11x = 2x + 16$$

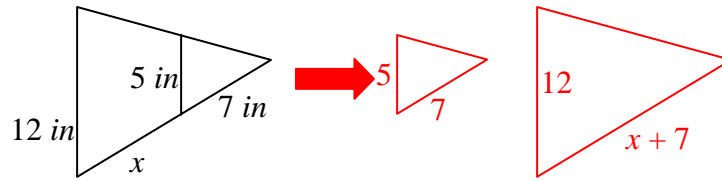
$$9x = 16$$

$$x = \frac{16}{9} \text{ mm}$$

Chapter 8 Extra Problems Worksheet

Find the value of x . The triangles in each are similar.

3.



$$\frac{7}{x+7} = \frac{5}{12}$$

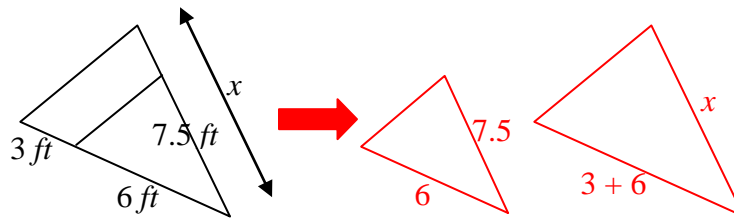
$$12 \cdot 7 = 5(x+7)$$

$$84 = 5x + 35$$

$$5x = 49$$

$$x = \frac{49}{5}$$

4.



$$\frac{x}{7.5} = \frac{3+6}{6} = \frac{9}{6} = \frac{3}{2}$$

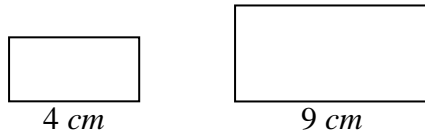
$$\frac{x}{7.5} = \frac{3}{2}$$

$$2x = 3(7.5) = 22.5$$

$$x = \frac{22.5}{2} = 11.25$$

Chapter 8 Extra Problems Worksheet

5. For the similar rectangles, give the ratios (smaller to larger) of the perimeters and of the areas.

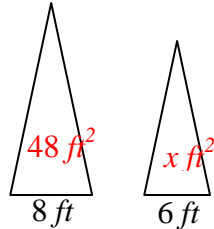


$$a = 4, b = 9; \text{ similarity ratio} = \frac{a}{b} = \frac{4}{9}$$

$$\text{ratio of perimeters} = \text{similarity ratio} = \frac{a}{b} = \frac{4}{9}$$

$$\text{ratio of areas} = (\text{similarity ratio})^2 = \frac{a^2}{b^2} = \frac{16}{81}$$

6. The triangles below are similar. The area of the larger triangle is 48 ft^2 . Find the area of the smaller triangle.



$$a = 6, b = 8; \text{ similarity ratio} = \frac{6}{8} = \frac{3}{4}$$

$$\text{ratio of areas} = \frac{a^2}{b^2} = \frac{9}{16}$$

$$\frac{x}{48} = \frac{9}{16}$$

$$x = \frac{9 \cdot 48}{16} = 27$$