

Honor's Geometry
7.4 Special Right Triangles

Name: Key

1. $x = 5\sqrt{2}$ $y = 5\sqrt{3}$

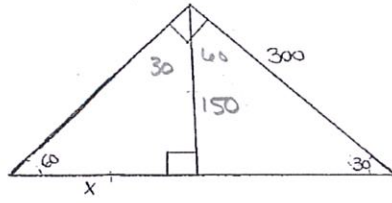
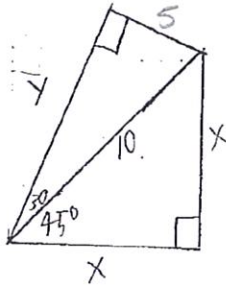
2. $x = 50\sqrt{3}$

$$10 = x\sqrt{2}$$

$$\frac{10}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = x$$

$$\frac{10\sqrt{2}}{2} = x$$

$$5\sqrt{2} = x$$



$$150 = x\sqrt{3}$$

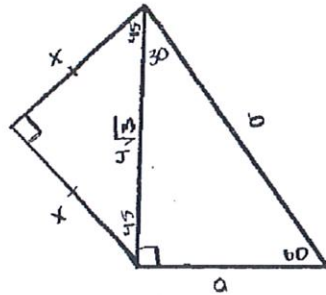
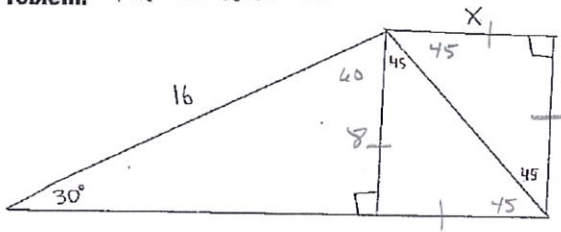
$$\frac{150}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = x$$

$$\frac{150\sqrt{3}}{3} = x \rightarrow 50\sqrt{3} = x$$

3. $x = 8$

4. $x = 4\sqrt{6}$ $a = 4$
 $b = 8$

Problem: Find the value of x.



$$4\sqrt{3} = x\sqrt{2}$$

$$\frac{4\sqrt{3}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = x$$

$$\frac{4\sqrt{6}}{2} = x$$

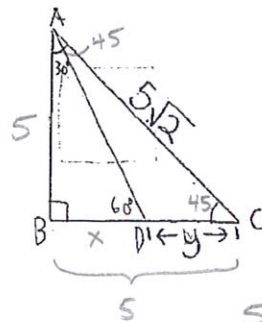
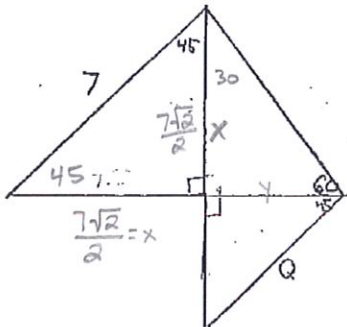
$$2\sqrt{6} = x$$

$$4\sqrt{3} = a\sqrt{3}$$

$$4 = a$$

5. $Q = \frac{14\sqrt{3}}{6}$

6. $y = 5 - \frac{5\sqrt{3}}{3} \approx 2.1$



$$7 = x\sqrt{2}$$

$$\frac{7}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = x$$

$$\frac{7\sqrt{2}}{2}$$

$$\frac{7\sqrt{2}}{2} = 7\sqrt{3}$$

$$Q = \frac{7\sqrt{6}}{6} \cdot \sqrt{2}$$

$$Q = \frac{7\sqrt{12}}{6}$$

$$Q = \frac{14\sqrt{3}}{6}$$

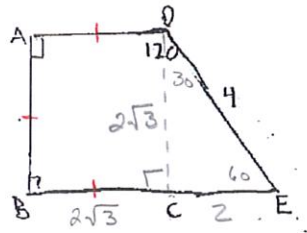
$$5 = x\sqrt{3}$$

$$\frac{5}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = x$$

$$\frac{5\sqrt{3}}{3} = x$$

$$y = 5 - \frac{5\sqrt{3}}{3} \approx 2.1$$

7. Find the area of the figure.



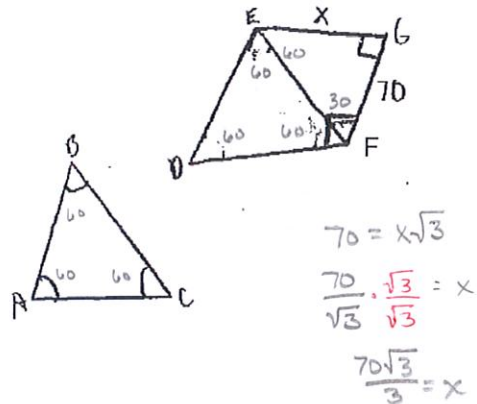
$$A_{ABCD} = (2\sqrt{3})(2\sqrt{3}) = 4(3) = 12$$

$$+ A_{\triangle CDE} = \frac{1}{2}(2)(2\sqrt{3}) = 2\sqrt{3}$$

$$12 + 2\sqrt{3} \approx 15.5$$

8. $x = \frac{70\sqrt{3}}{3}$

Problem: $\triangle ABC \sim \triangle DEF$

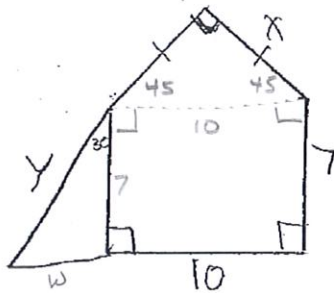


$$70 = x\sqrt{3}$$

$$\frac{70}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = x$$

$$\frac{70\sqrt{3}}{3} = x$$

9. $x = 5\sqrt{2}$ $y = \frac{14\sqrt{3}}{3}$



$$10 = x\sqrt{2}$$

$$\frac{10}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = x$$

$$\frac{10\sqrt{2}}{2} = x \rightarrow 5\sqrt{2} = x$$

$$7 = w\sqrt{3}$$

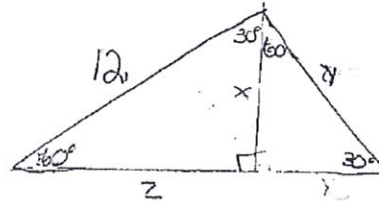
$$\frac{7}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = w$$

$$\frac{7\sqrt{3}}{3} = w$$

$$y = 2w = \frac{14\sqrt{3}}{3}$$

10. $x = 6\sqrt{3}$ $y = 12\sqrt{3}$
 $z = 6$

Find the values of x, y, z .



$$12 = 2z$$

$$6 = z$$

$$y = 2x$$

11.

$\triangle ABC$ is a $30^\circ - 60^\circ - 90^\circ$ triangle with coordinates $C(-9, -3)$ and $B(9, -3)$. Show all the necessary work to find the coordinates for A . Round answers to the nearest tenth, if necessary.

$$4.5\sqrt{3} \approx 7.8$$

$$7.8 - 3 = 4.8$$

$A(4.5, 4.8)$

