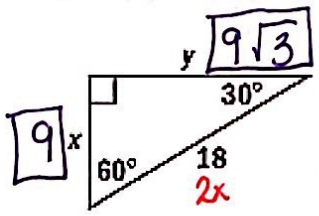
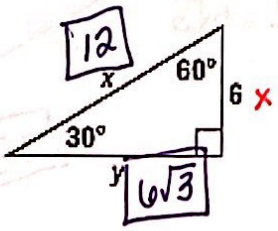
Day 4 - Discovering 30-60-90 Triangle Relationships – Practice

Directions: Find the value of each given variable.

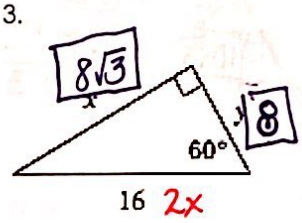
1.



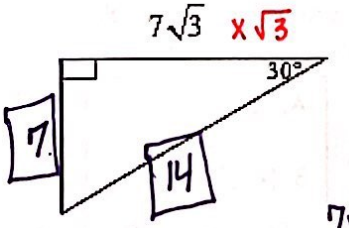
2.



3.



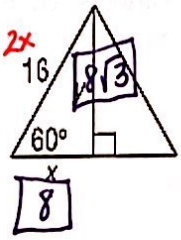
4.



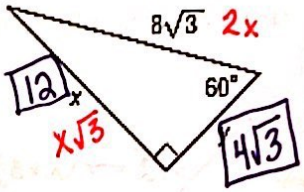
$\frac{7\sqrt{3}}{\sqrt{3}} = \frac{x\sqrt{3}}{\sqrt{3}}$

$x = 7$

5.



6.



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

$x = 4\sqrt{3}$

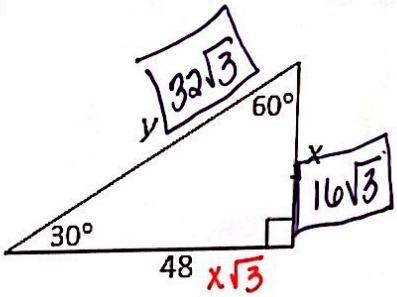
$4\sqrt{3} \cdot \sqrt{3}$

$4\sqrt{9}$

$4 \cdot 3$

12

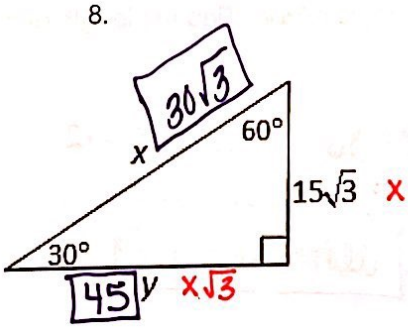
7.



$\frac{48}{\sqrt{3}} = \frac{x\sqrt{3}}{\sqrt{3}}$

$x = \frac{48}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{48\sqrt{3}}{3} = 16\sqrt{3}$

8.



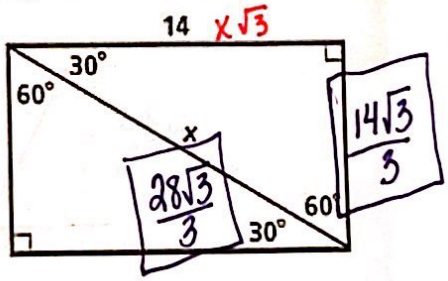
$15\sqrt{3} \cdot \sqrt{3}$

$15\sqrt{9}$

$15 \cdot 3$

45

9.

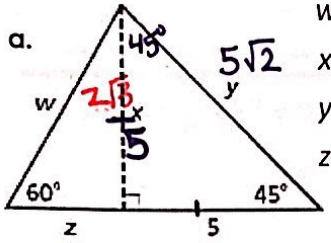


$\frac{14}{\sqrt{3}} = \frac{x\sqrt{3}}{\sqrt{3}}$

$x = \frac{14}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{14\sqrt{3}}{3}$

10. Find the value of each variable. Leave your answers in simplest radical form.

a.



$w = \frac{10\sqrt{3}}{3}$

$x = 5$

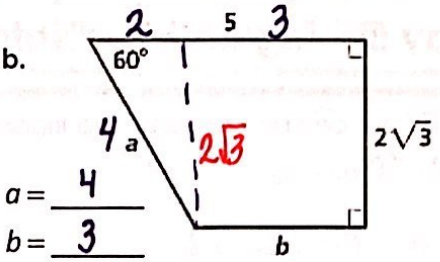
$y = 5\sqrt{2}$

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

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

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

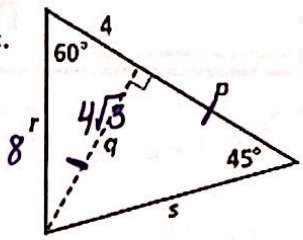
b.



$a = 4$

$b = 3$

c.



$p = 4\sqrt{3}$

$q = 4\sqrt{3}$

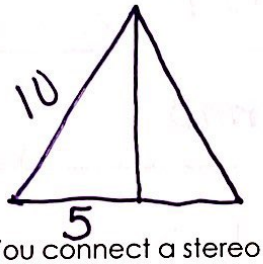
$r = 8$

$s = 4\sqrt{6}$

$s = 4\sqrt{3} \cdot \sqrt{2}$

$= 4\sqrt{6}$

11. An equilateral triangle has a side length of 10 inches. Find the length of the triangle's altitude.



altitude = $5\sqrt{3}$

12. You connect a stereo system to your television set. The directions say that the speakers should be in line with your television and 12 feet apart as shown.

a. Find the distance between you and the television set. = $6\sqrt{3}$ or 10.4 ft

b. Find the distance between you and each speaker. = 12 ft