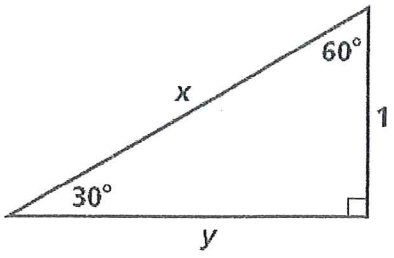
Name: _____ Hour: _____ Date: _____

Practice Day 3 Hwk

Special Right Triangles

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

1.



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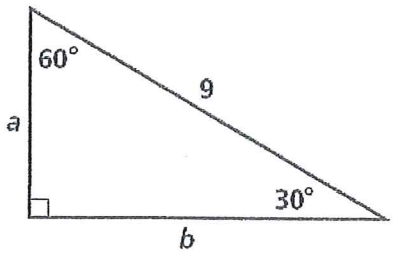
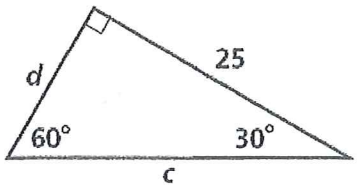


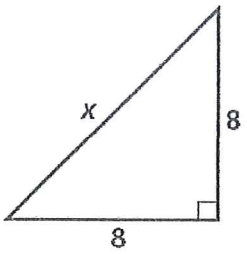
3.



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

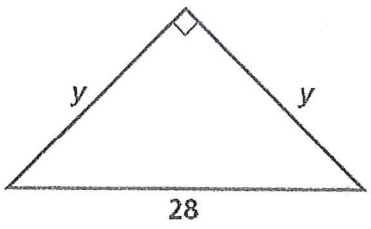
$a =$ 4.5 or $\frac{9}{2}$ $b =$ $4.5\sqrt{3}$ or $\frac{9}{2}\sqrt{3}$ $c =$ $\frac{50\sqrt{3}}{3}$ $d =$ $\frac{25\sqrt{3}}{3}$

4.



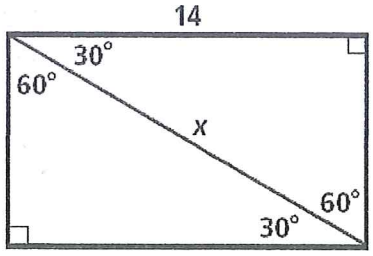
$x =$ $8\sqrt{2}$

5.



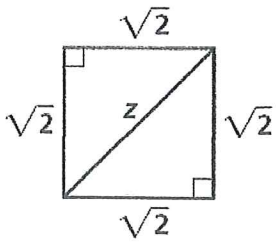
$y =$ $14\sqrt{2}$

6.



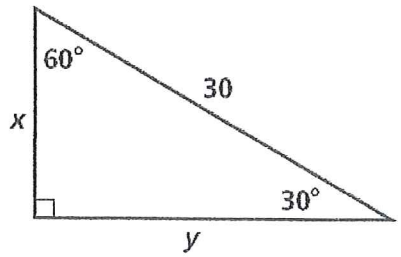
$x =$ $\frac{28}{3}\sqrt{3}$

7.



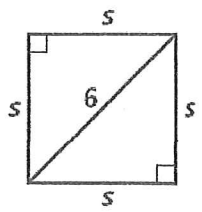
$z =$ 2

8.



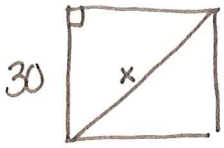
$x =$ 15 $y =$ $15\sqrt{3}$

9.



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

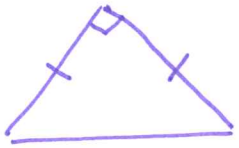
10. Find the length to the nearest centimeter of the diagonal of a square with 30 cm on a side.



diagonal $= 30\sqrt{2}$ cm

diagonal ≈ 42 cm

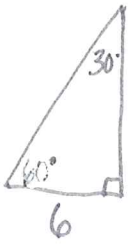
11. The hypotenuse of an isosceles right triangle is 8.4 in. find the length of a side to the nearest tenth.



Side $= 4.2\sqrt{2}$

Sides ≈ 5.9 inches

12. In a 30°- 60° - 90° triangle, the shorter leg is 6 ft long. Find the length of the other two sides to the nearest tenth.



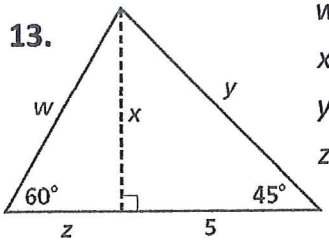
longer leg $= 6\sqrt{3}$

LL ≈ 10.4 ft

hypotenuse $= 12$ ft

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

13.



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

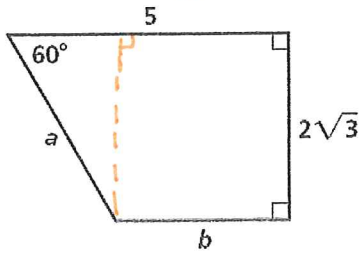
$x = 5$

$y = 5\sqrt{2}$

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

need a helping line

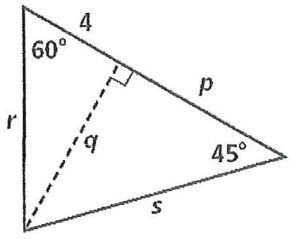
14.



$a = 4$

$b = 3$

15.



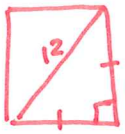
$p = 4\sqrt{3}$

$q = 4\sqrt{3}$

$r = 8$

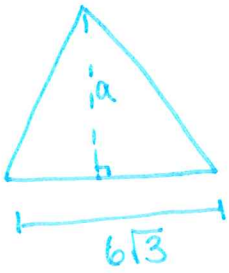
$s = 4\sqrt{6}$

16. The length of the diagonal of a square is 12 inches. Find the length of one side of the square.



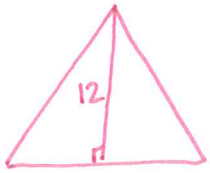
Side = $6\sqrt{2}$ inches

17. The length of one side of an equilateral triangle is $6\sqrt{3}$ meters. Find the length of the altitude of the triangle.



altitude = 18m

18. The length of the altitude of an equilateral triangle is 12 feet. Find the length of one side of the equilateral triangle. What is the perimeter of the equilateral triangle?

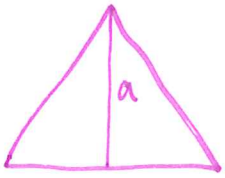


Side = $8\sqrt{3}$

perimeter = $24\sqrt{3}$ ft

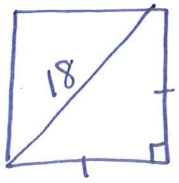
19. The perimeter of an equilateral triangle is 39 cm. Find the length of the altitude of the triangle.

P = 39



altitude = $6.5\sqrt{3}$ cm

20. The length of the diagonal of a square is 18 mm. Find the perimeter of the square.



perimeter = $36\sqrt{2}$ mm