

Key

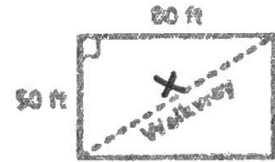
1. Find the value of x . Give the answer in simplest radical form.



2. Find the missing side length. Tell if the side lengths form a Pythagorean triple. Explain.



3. Tell if the measures 10, 12, and 16 can be the side lengths of a triangle. If so, classify the triangle as acute, obtuse, or right.
4. A landscaper wants to place a stone walkway from one corner of the rectangular lawn to the opposite corner. What will be the length of the walkway? Round to the nearest inch.



$$1) 5^2 + 9^2 = x^2$$

$$25 + 81 = x^2$$

$$\sqrt{106} = \sqrt{x^2}$$

$x = \sqrt{106}$

$$3) 10 + 12 > 16?$$

$$22 > 16?$$

yes

$$4) 50^2 + 80^2 = x^2$$

$$2500 + 6400 = x^2$$

$$\sqrt{8900} = \sqrt{x^2}$$

$x = 94 \text{ ft } 4 \text{ in}$

$$2) 9^2 + x^2 = 11^2$$

$$81 + x^2 = 121$$

$$\begin{array}{r} -81 \\ \hline x^2 = 40 \end{array}$$

Not a Pyth. triple.

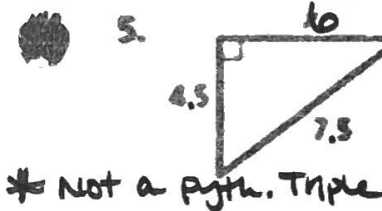
$$16^2 \square 10^2 + 12^2$$

$$256 \square 100 + 144$$

$$256 \square 244$$

OBTUSE

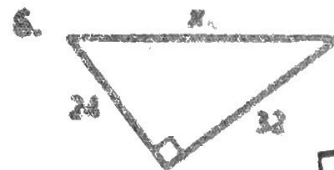
Find the missing side length. Tell if the sides form a Pythagorean triple. Explain.



$$4.5^2 + x^2 = 7.5^2$$

$$\begin{array}{r} 20.25 + x^2 = 56.25 \\ -20.25 \\ \hline x^2 = 36 \end{array}$$

$x = 6$



$$24^2 + 32^2 = x^2$$

$$576 + 1024 = x^2$$

$$\sqrt{1600} = \sqrt{x^2}$$

$x = 40$; yes its a Pyth. Triple.

Tell if the measures can be the side lengths of a triangle. If so, classify the triangle as acute, obtuse, or right.

7. 9, 12, 16

8. 11, 14, 27

9. 1.5, 3.6, 3.9

7) $9 + 12 > 16?$

$$21 > 16$$

Yes

$$16^2 \square 9^2 + 12^2$$

$$256 \square 81 + 144$$

$$256 \square 225$$

OBTUSE

8) $11 + 14 > 27?$

$$25 > 27$$

NO, Can't make Δ

9) $1.5 + 3.6 > 3.9?$

$$5.1 > 3.9?$$

Yes

$$3.9^2 \square 1.5^2 + 3.6^2$$

$$15.21 \square 2.25 + 12.96$$

$$15.21 \square 15.21$$

Right Triangle

Use a special right triangle to write each trigonometric ratio as a fraction.

1. $\tan 45^\circ = \boxed{1}$

2. $\sin 30^\circ = \boxed{\frac{1}{2}}$

3. $\cos 30^\circ = \boxed{\frac{\sqrt{3}}{2}}$

Use your calculator to find each trigonometric ratio. Round to the nearest hundredth.

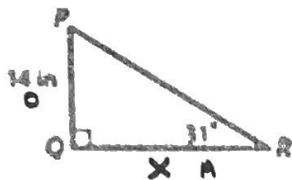
4. $\sin 16^\circ = \boxed{.28}$

5. $\cos 79^\circ = \boxed{.19}$

6. $\tan 27^\circ = \boxed{.51}$

Find each length. Round to the nearest hundredth.

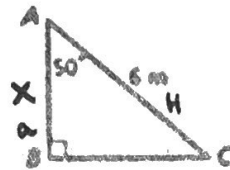
7. QR



$\tan 31 = \frac{14}{x}$
 $x = \frac{14}{\tan 31}$

$\boxed{23.30}$

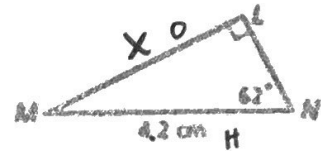
8. AB



$\cos 50 = \frac{x}{6}$

$x = 6 \cos 50 = \boxed{3.86}$

9. LM

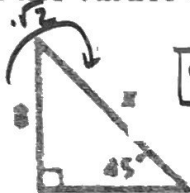


$\sin 62 = \frac{x}{4.2}$

$x = 4.2 \sin 62 = \boxed{3.71}$

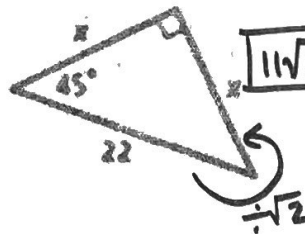
Find the values of the variables. Give your answers in simplest radical form.

11.



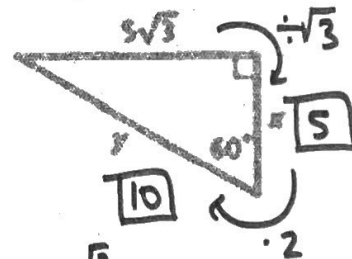
$\boxed{8\sqrt{2}}$

12.



$\boxed{11\sqrt{2}}$

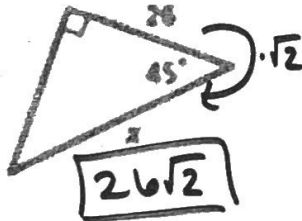
13.



$\boxed{10}$

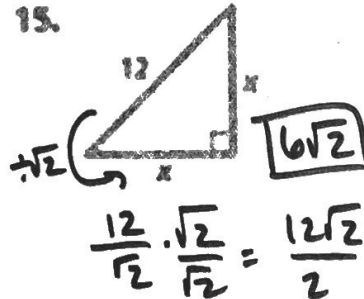
$\boxed{5}$

14.



$\boxed{26\sqrt{2}}$

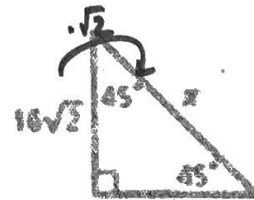
15.



$\boxed{6\sqrt{2}}$

$\frac{12}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{12\sqrt{2}}{2} =$

16.



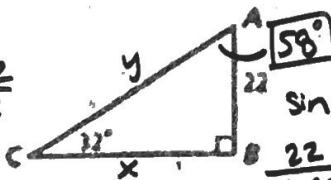
$16\sqrt{2} \cdot \sqrt{2} = 16 \cdot 2 =$

$\boxed{32}$

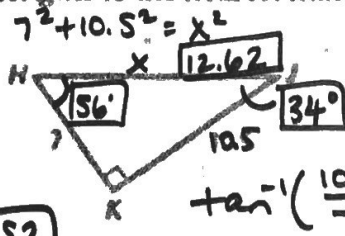
Find the unknown measures. Round lengths to the nearest hundredth and angle measures to the nearest degree.

10.

$\tan 32 = \frac{22}{x}$
 $\frac{22}{\tan 32} = \boxed{35.21}$



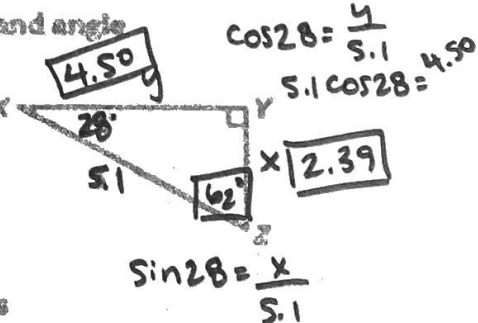
11.



$\tan^{-1}\left(\frac{10.5}{7}\right) =$

$\boxed{41.52}$

12.



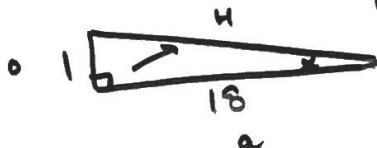
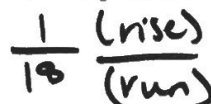
$\cos 28 = \frac{y}{5.1}$
 $5.1 \cos 28 = 4.50$

$\sin 28 = \frac{x}{5.1}$

$5.1 \sin 28 = 2.39$

$\boxed{2.39}$

13. The wheelchair ramp at the entrance of the Mission Bay Library has a slope of $\frac{1}{18}$. What angle does the ramp make with the sidewalk? Round to the nearest degree.



$\tan^{-1}\left(\frac{1}{18}\right) = \boxed{3^\circ}$