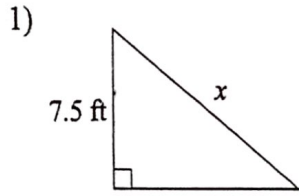


G4: Trigonometry Review C - Level

Find the missing side of each triangle. Round your answers to the nearest hundredth if necessary.

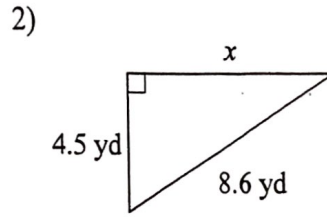


$$7.5^2 + 9.6^2 = x^2$$

$$56.25 + 92.16 = x^2$$

$$\sqrt{148.41} = \sqrt{x^2}$$

$$12.18 = x$$



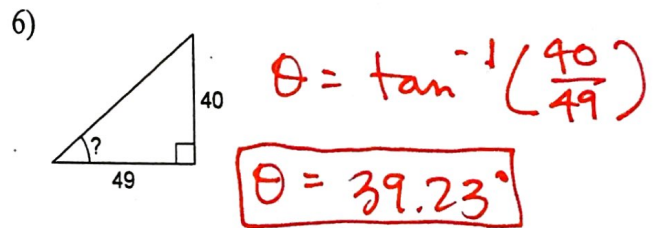
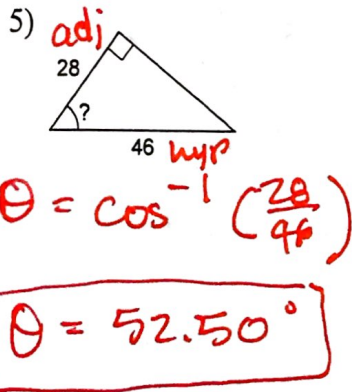
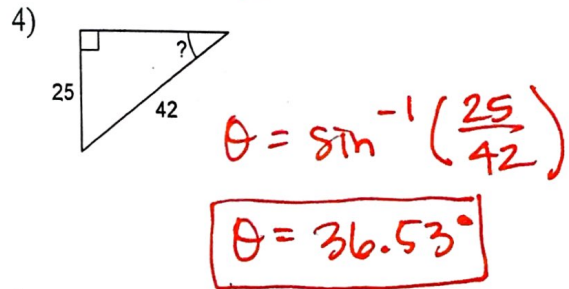
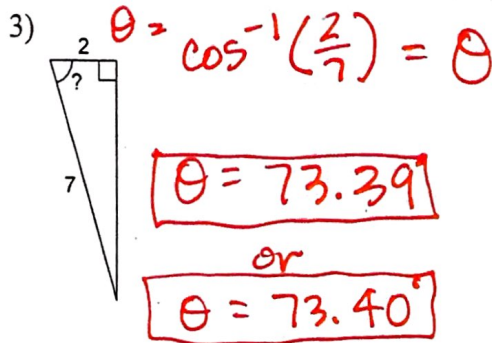
$$4.5^2 + x^2 = 8.6^2$$

$$20.25 + x^2 = 73.96$$

$$\begin{array}{r} -20.25 \\ \hline x^2 = 53.71 \end{array}$$

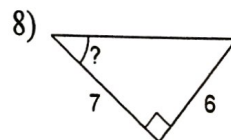
$$x = 7.33$$

Find the measure of the indicated angle to the nearest degree.



$$\theta = \cos^{-1}\left(\frac{19}{30}\right)$$

$$\theta = 50.70^\circ$$



$$\theta = \tan^{-1}\left(\frac{6}{7}\right)$$

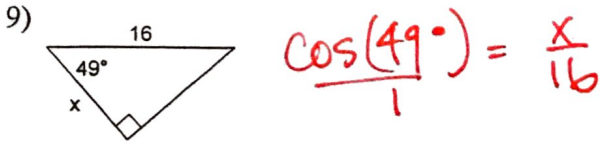
$$\theta = 40.60^\circ$$

rise  
run  
y  
x

$y = \tan^{-1}\left(\frac{y}{x}\right)$

Winkel

Find the missing side. Round to the nearest thousandth.



$$\frac{\cos(49^\circ)}{1} = \frac{x}{16}$$

$$x \cdot 1 = 16 \cdot \cos(49^\circ)$$

$$x = 10.49$$

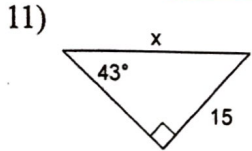
or  $x = 10.50$



$$\frac{\tan(53^\circ)}{1} = \frac{x}{12}$$

$$12 \cdot \tan(53^\circ) = x \cdot 1$$

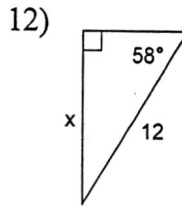
$$15.92 = x$$



$$\frac{\sin(43^\circ)}{1} = \frac{15}{x}$$

$$15 \cdot 1 = x \sin(43^\circ)$$

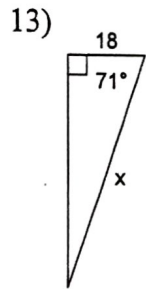
$$\frac{15}{\sin(43^\circ)} = 21.99 = x$$



$$\frac{\sin(58^\circ)}{1} = \frac{x}{12}$$

$$x \cdot 1 = 12 \cdot \sin(58^\circ)$$

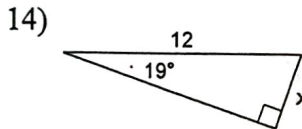
$$x = 10.18$$



$$\frac{\cos(71^\circ)}{1} = \frac{18}{x}$$

$$\frac{18 \cdot 1 = x \cos(71^\circ)}{\cos(71^\circ) \cos(71^\circ)}$$

$$55.29 = x$$



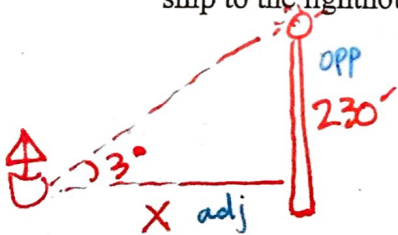
$$\frac{\sin(19^\circ)}{1} = \frac{x}{12}$$

$$x \cdot 1 = 12 \cdot \sin(19^\circ)$$

$$x = 3.91$$

Draw a diagram to help solve this problem. Your diagram should be of a right triangle. Round your answer to the nearest thousandth.

- 15) The angle of elevation from a ship, at sea level, to the top of a 230-foot lighthouse is  $3^\circ$ . What is the horizontal distance from the ship to the lighthouse?



$$x = \frac{230}{\tan(3^\circ)}$$

$$\frac{\tan(3^\circ)}{1} = \frac{230}{x}$$

$$230 \cdot 1 = x \tan(3^\circ)$$

$$x = 4388.66'$$

from boat to lighthouse

- 16) Damon is locked out of his house. The only open window is on the second floor, which is 12 feet above the ground. He needs to borrow a ladder from his neighbor. Mrs. Thompson has a 13 foot ladder. How far from the house (horizontal distance) should he place the ladder?

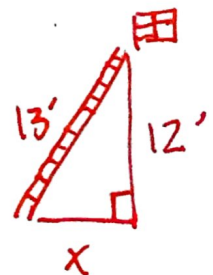
$$x^2 + 12^2 = 13^2$$

$$x^2 + 144 = 169$$

$$x^2 - 144 = 169 - 144$$

$$\sqrt{x^2} = \sqrt{25}$$

$$x = 5$$

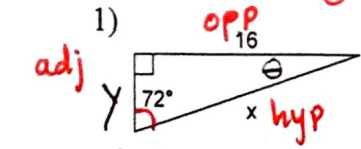


G4: B Level Test Review

Date \_\_\_\_\_ Period \_\_\_\_\_

Find ALL the missing SIDES and ANGLES of the triangle. Solve for X, Y, and theta. Round to the nearest hundredth.

$\theta = 18^\circ$  (Triangle Sum theorem)

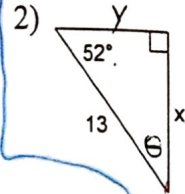


$\tan(72^\circ) = \frac{16}{y}$

$\frac{16}{\tan(72^\circ)} = y = 5.19$

$\frac{16}{\sin(\theta)} = \frac{16}{x}$

$\frac{16}{\sin(72^\circ)} = 16.82 = x$



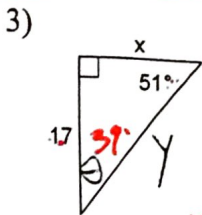
$\theta = 38^\circ$

$\sin(52^\circ) = \frac{x}{13}$

$x = 10.24$

$\cos(52^\circ) = \frac{y}{13}$

$y = 8$



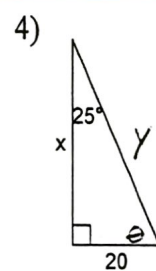
$\sin(51^\circ) = \frac{17}{x}$

$y = 21.87$

~~$\tan(51^\circ) = \frac{17}{x}$~~

~~$x = 13.77$~~

$\theta = 39^\circ$



$\sin(25^\circ) = \frac{20}{y}$

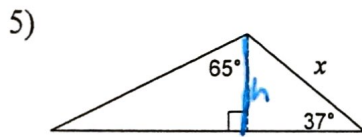
$y = 47.32$

$\cos(25^\circ) = \frac{x}{47.23}$

$x = 42.89$

$\theta = 65^\circ$

Find the length of the side labeled x. Round your answer to the nearest hundredth.

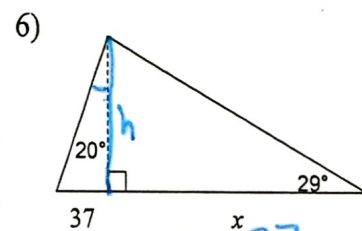


$\tan(65^\circ) = \frac{11}{h}$

then:  $\sin(37^\circ) = \frac{5.12}{x}$

$h = 5.12$

$x = 8.51$



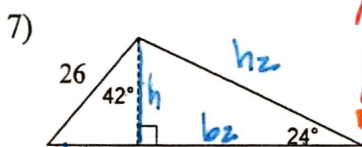
$\tan(20^\circ) = \frac{37}{h}$

$h = 101.66$

Then:  $\tan(29^\circ) = \frac{101.66}{x}$

$x = 183.40$

Find the area and perimeter of the triangle. Round your answers to the nearest hundredth.



$\cos(42^\circ) = \frac{b_1}{26}$

$h = 19.32$

$A = \frac{1}{2}bh$

$A = \frac{1}{2}(17.39 + 43.40)(19.32)$

$A = 587.23$

$P = 26 + 47.50 + 43.40 + 17.39$

$P = 134.29$

$\sin(42^\circ) = \frac{h}{26}$

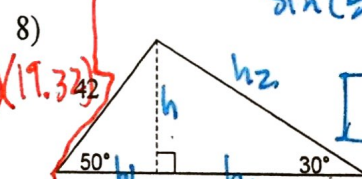
$b_1 = 17.39$

$\tan(24^\circ) = \frac{19.32}{b_2}$

$b_2 = 43.40$

$\sin(24^\circ) = \frac{19.32}{h_2}$

$h_2 = 47.50$



$\sin(50^\circ) = \frac{h}{42}$

$h = 32.17$

$b_1 = 26.99$

$\sin(30^\circ) = \frac{32.17}{h_2}$

$h_2 = 64.34$

$b_2 = 55.72$

$P = 189.05$

$A = 1330.39$