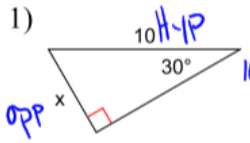
Geometry Name_____

Right Triangle Trigonometry

Date_____ Period____

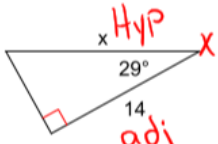
Find the missing side. Round to the nearest thousandth (third decimal place).

1) 

$10 \cdot \sin(30) = \frac{x}{10} \cdot 10$

$10\sin(30) = x$

$x = 5$

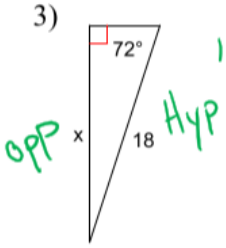
2) 

$x \cdot \cos(29) = \frac{14}{x} \cdot x$

$\frac{x \cdot \cos(29)}{\cos(29)} = \frac{14}{\cos(29)}$

$x = \frac{14}{\cos(29)}$

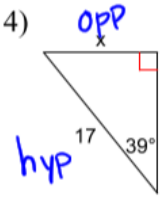
$x = 16.007$

3) 

$18 \cdot \sin(72) = \frac{x}{18} \cdot 18$

$18\sin(72) = x$

$x = 17.119$

4) 

$17 \cdot \sin(39) = \frac{x}{17} \cdot 17$

$17 \cdot \sin(39) = x$

$x = 10.698$

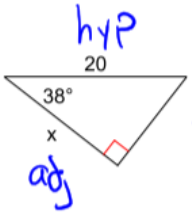
5) 

$x \cdot \cos(22) = \frac{14}{x} \cdot x$

$\frac{x \cdot \cos(22)}{\cos(22)} = \frac{14}{\cos(22)}$

$x = \frac{14}{\cos(22)}$

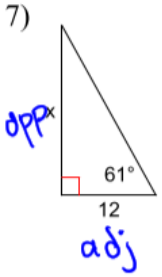
$x = 15.099$

6) 

$20 \cdot \cos(38) = \frac{x}{20} \cdot 20$

$20 \cdot \cos(38) = x$

$x = 15.760$

7) 

$\tan(61) = \frac{x}{12}$

$x = 12 \cdot \tan(61)$

$x = 21.649$

8) 

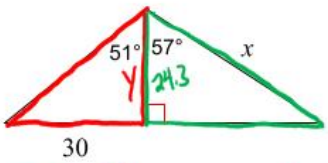
$\tan(23) = \frac{x}{17}$

$x = 17 \cdot \tan(23)$

$x = 7.216$

Find the length of the side labeled *x*. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

9)

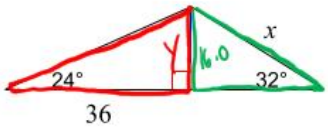


$\tan(51) = \frac{30}{Y}$ $\quad \cos(57) = \frac{24.3}{X}$

$Y = \frac{30}{\tan(51)}$ $\quad X = \frac{24.3}{\cos(57)}$

$Y = 24.3$ $\quad X = 44.617$

10)

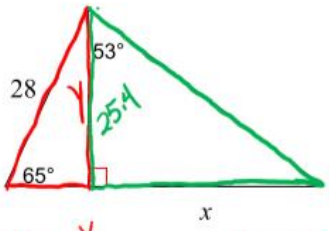


$\tan(24) = \frac{Y}{36}$ $\quad \sin(32) = \frac{16.0}{X}$

$Y = 36 \cdot \tan(24)$ $\quad X = \frac{16.0}{\sin(32)}$

$Y = 16.0$ $\quad X = 30.2$

11)

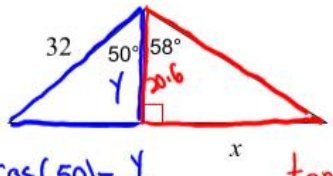


$\sin(65) = \frac{Y}{28}$ $\quad \tan(53) = \frac{X}{25.4}$

$Y = 28 \cdot \sin(65)$ $\quad X = 25.4 \cdot \tan(53)$

$Y = 25.4$ $\quad X = 33.7$

12)

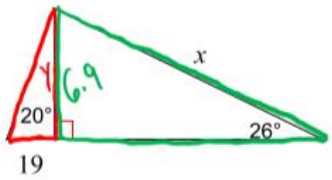


$\cos(50) = \frac{Y}{32}$ $\quad \tan(58) = \frac{X}{20.6}$

$Y = 32 \cdot \cos(50)$ $\quad X = 20.6 \cdot \tan(58)$

$Y = 20.6$ $\quad X = 33.0$

13)

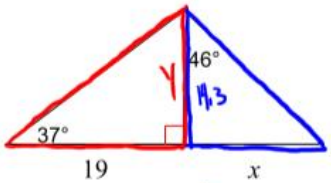


$\tan(20) = \frac{Y}{19}$ $\quad \sin(26) = \frac{6.9}{X}$

$Y = 19 \cdot \tan(20)$ $\quad X = \frac{6.9}{\sin(26)}$

$Y = 6.9$ $\quad X = 15.7$

14)



$\tan(37) = \frac{Y}{19}$ $\quad \tan(46) = \frac{X}{14.3}$

$Y = 19 \cdot \tan(37)$ $\quad X = 14.3 \cdot \tan(46)$

$Y = 14.3$ $\quad X = 14.8$