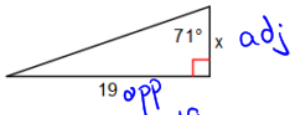
Geometry Name_____

# Right Triangle Trigonometry

Date_____ Period____

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

1)

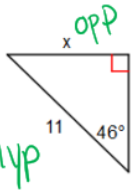



adj, opp

$\tan(71) = \frac{19}{x}$

$x = \frac{19}{\tan(71)}$

2)

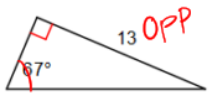



opp, hyp

$\sin(46) = \frac{x}{11}$

$x = 11 \cdot \sin(46)$

3)

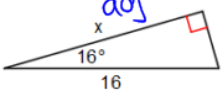



opp, hyp

$\sin(67) = \frac{13}{x}$

$x = \frac{13}{\sin(67)}$

4)

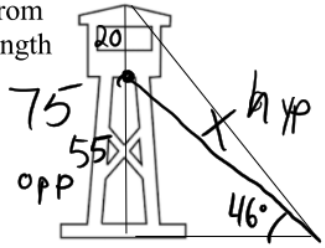



adj, hyp

$\cos(16) = \frac{x}{16}$

$x = 16\cos(16)$

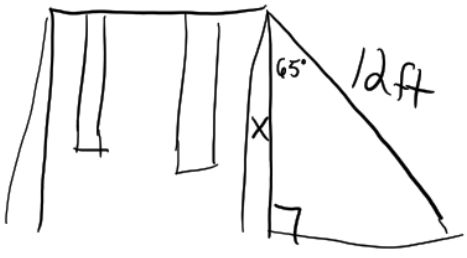
5. An observation tower is 75 m high. A support wire is attached to the tower 20 m from the top. If the support wire and the ground form an angle of 46 degrees, what is the length of the support wire, to the nearest tenth?




$\sin(46) = \frac{55}{x}$

$x = \frac{55}{\sin(46)}$

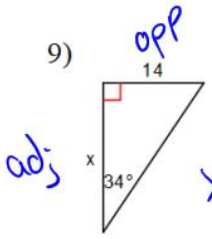
6. A 12 foot slide is attached to a swing set. The slide makes a 65° angle with the swing set. What is the height to the top of the slide?




$\cos(65^\circ) = \frac{x}{12}$

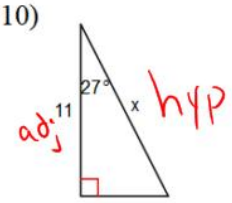
$x = 12 \cdot \cos(65)$

# SOH - CAH - ToA

9) 

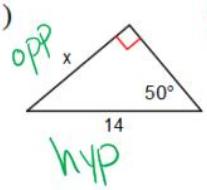

$\tan(34) = \frac{14}{x}$

$x = \frac{14}{\tan(34)}$

10) 

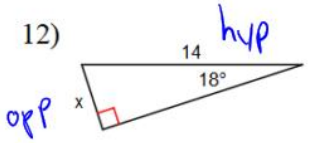

$\cos(27) = \frac{11}{x}$

$x = \frac{11}{\cos(27)}$

11) 


$\sin(50) = \frac{x}{14}$

$x = 14 \cdot \sin(50)$

12) 


$\sin(18) = \frac{x}{14}$

$x = 14 \cdot \sin(18)$

**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.**

13) 


$\tan(51) = \frac{30}{y}$

$y = \frac{30}{\tan(51)}$

$\cos(57) = \frac{x}{\text{hyp}}$

$x = \frac{\text{adj}}{\cos(57)}$

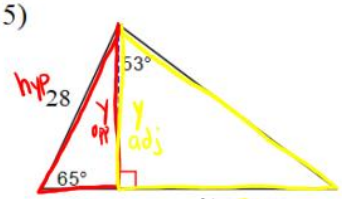
14) 


$\tan(24) = \frac{a}{36}$

$a = 36 \cdot \tan(24)$

$\sin(32) = \frac{x}{\text{hyp}}$

$x = \frac{\text{opp}}{\sin(32)}$

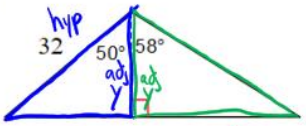
15) 


$\sin(65) = \frac{y}{28}$

$y = 28 \cdot \sin(65)$

$\tan(53) = \frac{x}{\text{adj}}$

$x = \tan(53)$

16) 

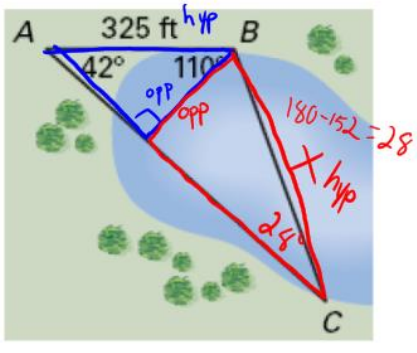

$\cos(50) = \frac{y}{32}$

$y = 32 \cdot \cos(50)$

$\tan(58) = \frac{x}{\text{adj}}$

$x = \tan(58)$

17) A surveyor needs to find the distance BC across a lake as part of a project to build a bridge. The distance from point A to point B is 325 feet. The measurement of angle A is 42° and the measurement of angel B is 110°. What is the distance BC across the lake to the nearest foot?




$\sin(42) = \frac{y}{325}$

$y = 325 \cdot \sin(42)$

$\sin(28) = \frac{x}{\text{hyp}}$

$x = \frac{\text{opp}}{\sin(28)}$