

5-1 Trig Functions

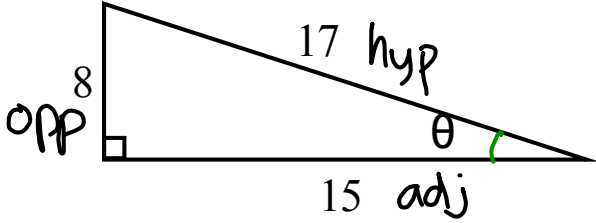
Writing Trig Ratios Task

SOH $\sin \theta = \frac{\text{opp}}{\text{hyp}}$ } sides of Δ $\theta = \text{angle "theta"}$

CAH $\cos \theta = \frac{\text{adj}}{\text{hyp}}$

TOA $\tan \theta = \frac{\text{opp}}{\text{adj}}$

SOH
CAH
TOA



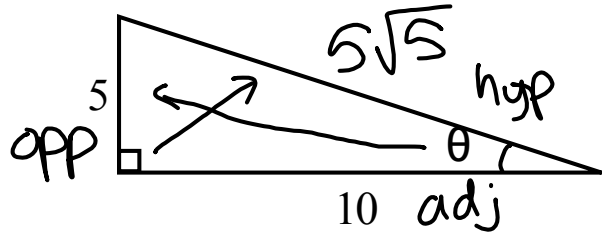
Find all trig ratios for the given triangle:
 $\sin \theta, \cos \theta, \tan \theta$

$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{8}{17}$

$\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{15}{17}$

$\tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{8}{15}$

SOH
CAH
TOA



Find all trig ratios for the given triangle:

$$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{5}{5\sqrt{5}} = \frac{1}{\sqrt{5}} \quad \tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{5}{10}$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{10}{5\sqrt{5}} = \frac{2}{\sqrt{5}}$$

Standing 12' from a tree you must look up at 43° to see the top of the tree. How tall is the tree?

SOH
CAH
TOA

$$12 \cdot \tan 43^\circ = \frac{X}{12} \cdot 12$$

$$X = 12 \cdot \tan 43^\circ$$

calculator

$$12 \times \tan(43) =$$

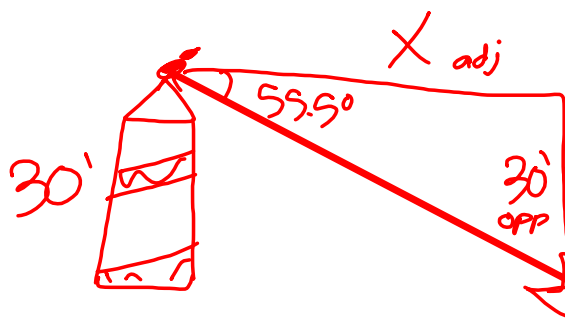
11.19 ft

Degree mode

iPhone

Rad

$43 \tan \times 12$



A bird sitting on a 30' tower looks at a boat from an angle of depression of 55.5° . How far is the boat from the tower? **TOA**

$$X \cdot \tan 55.5^\circ = 30$$

$$\frac{X \cdot \tan 55.5^\circ}{\tan 55.5^\circ} = \frac{30}{\tan 55.5^\circ}$$

$$X = \frac{30}{\tan 55.5^\circ} \approx \boxed{20.6 \text{ ft}}$$