

4.2 Trig Functions

#42

SohCahToa

sine

cosecant

cosine

secant

tangent

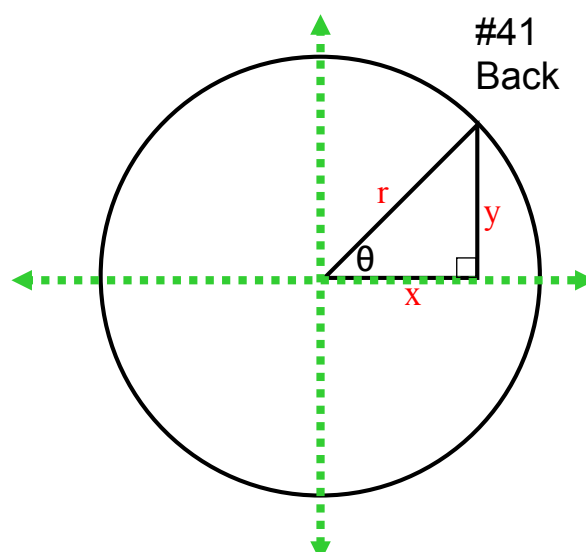
cotangent

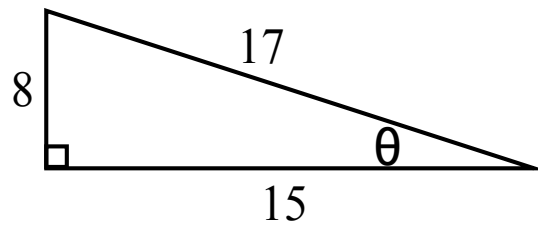
$$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{y}{r}$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{x}{r}$$

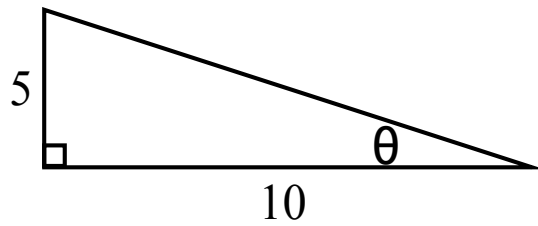
$$\tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{y}{x}$$

$$\sec \theta = \frac{\text{hyp}}{\text{adj}} = \frac{r}{x} \quad \csc \theta = \frac{\text{hyp}}{\text{opp}} = \frac{r}{y} \quad \cot \theta = \frac{\text{adj}}{\text{opp}} = \frac{x}{y}$$





Find all six trig ratios for the given triangle:



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Given the following trig function, find the remaining 5 functions:

$$\csc \theta = \frac{13}{5}$$

Work on 3-18 (remember every third)

Using your calculator, find:

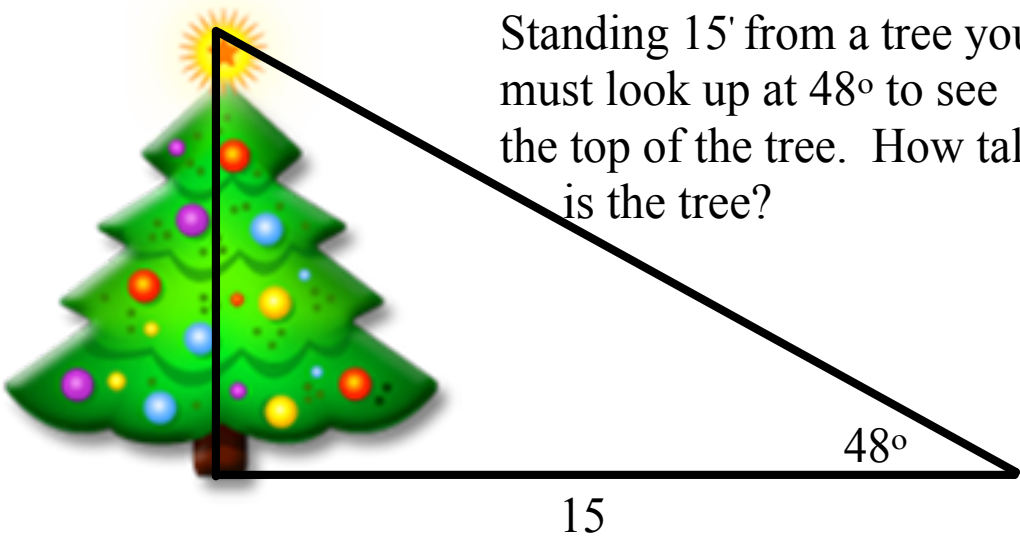
$$\tan 8^\circ =$$

$$\cot \frac{\pi}{12} =$$


$$\cos 18.15^\circ =$$

$$\tan 5.25 =$$

$$\sec \frac{\pi}{6} =$$

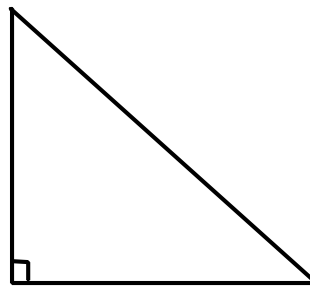
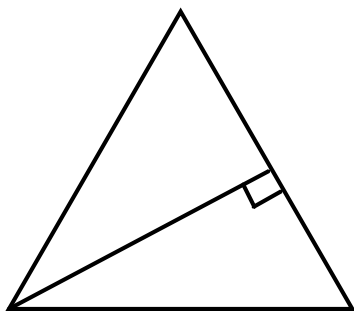


Standing 15' from a tree you must look up at 48° to see the top of the tree. How tall is the tree?



A bird sitting on a 33' tower looks at a boat from an angle of depression of 50.5° . How far is the boat from the tower?

Special Triangles



Find the angle or value without a calculator:

$$\cot \frac{\pi}{3} =$$

$$\sin \theta = \frac{\sqrt{3}}{2}$$

$$\sec \frac{\pi}{6} =$$

$$\cos \theta = \frac{1}{2}$$

$$\sec \theta = 2$$

