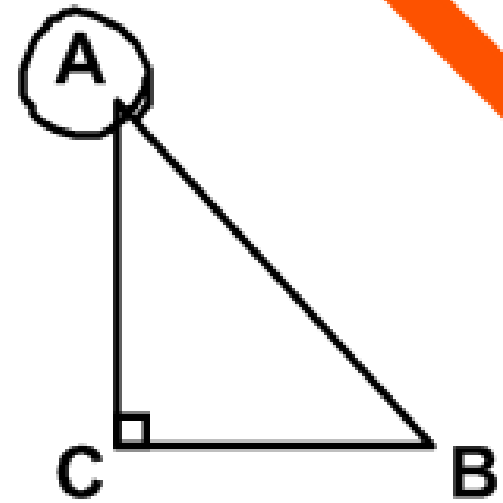


7 - 4

Trigonometry

SOH CAH TOA

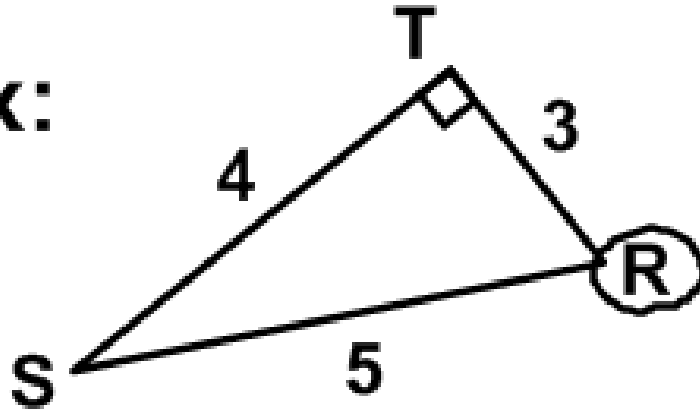


$$\text{sine of } \angle A = \frac{\text{OPP}}{\text{hyp}}$$

$$\text{cosine of } \angle A = \frac{\text{adj}}{\text{hyp}}$$

$$\text{tangent of } \angle A = \frac{\text{OPP}}{\text{adj}}$$

Ex:



$$\sin R = \frac{4}{5} = 0.8$$

SOH

$$\cos R = \frac{3}{5} = 0.6$$

CAH

$$\tan R = \frac{4}{3} = 1.\bar{3}$$

TOA

$$\sin S =$$

$$\cos S =$$

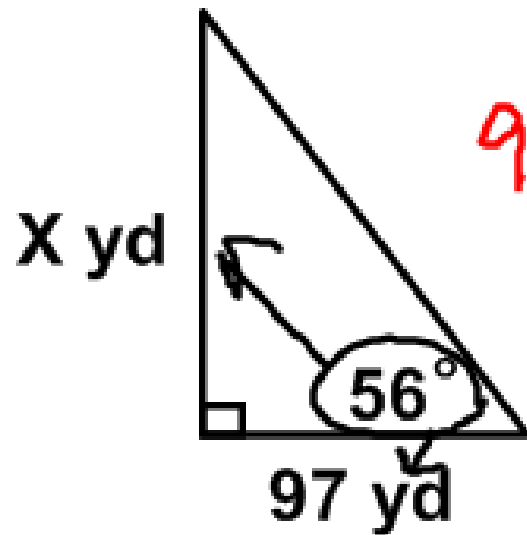
$$\tan S =$$

Use a calculator to find each value to the nearest hundredth.

$$\text{Ex: } \cos 39^\circ \approx .78$$

$$\text{Ex: } \sin 67^\circ \approx .92$$

Ex: Solve for x.

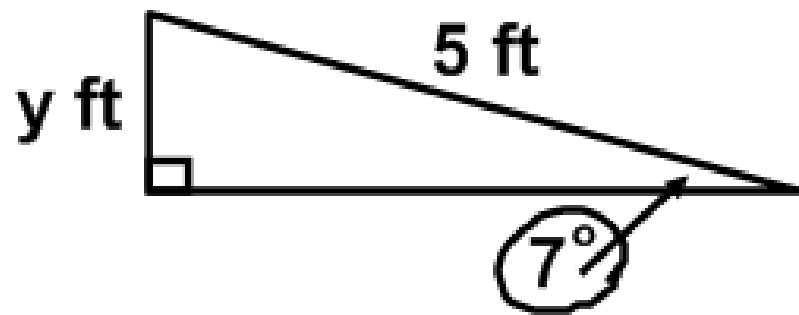


$$97 \cdot \tan 56 = \frac{x}{\cancel{97}} \cdot \cancel{97}$$

$$143.8 = x$$

TOA

Ex: Solve for y .



SOH

$$5 \cdot \sin 7 = \frac{y}{\cancel{5}}$$

$$0.6 = y$$

$$x \cdot \sin 45 = \frac{60}{x}$$

$$\frac{x \sin 45}{\sin 45} = \frac{60}{\sin 45}$$

$$x = \frac{60}{\sin 45}$$

$$x = 84.9$$

$$\sin 45 = \frac{60}{x}$$

when you know the sine and
you are looking for the angle,
use inverse sine

(or cosine, tangent)

Ex: $\sin B = \frac{12}{13}$

$$B = \sin^{-1} \frac{12}{13}$$

$$B = 67.4^\circ$$

Hint

When you can type it, type it.

Ex: $\sin 42 = x$

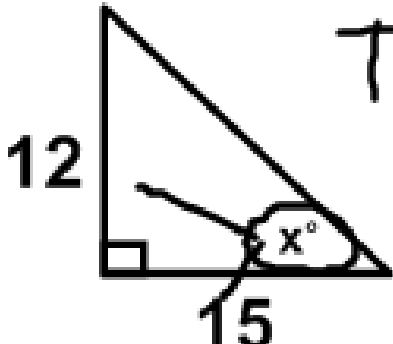
$$x \approx .67$$

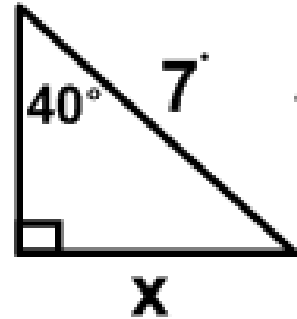
When you can't type it, use inverse.

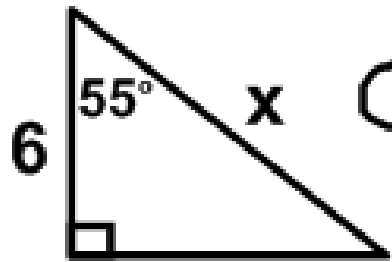
Ex: $\tan A = .2541$

$$A = 14.3^\circ$$

On your own... Find x for each.

Ex:  TOA $\tan x = \frac{12}{15}$ $x = 38.7^\circ$

Ex:  SOH $7 \cdot \sin 40 = \frac{x}{7}$ $4.5 = x$

Ex:  CAH $\cos 55 = \frac{6}{x}$ $x = \frac{6}{\cos 55}$ $x = 10.5$



Homework:

7 - 4 WS (odds)