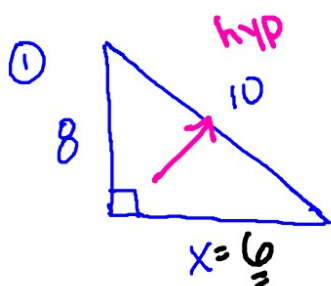


DRILL



$$x^2 + 8^2 = 10^2$$
$$x^2 + 64 = 100$$
$$\begin{array}{r} -64 \\ -64 \end{array}$$

*

$$\sqrt{x^2} = \sqrt{36}$$
$$x = 6$$

- 4
- 9
- 16
- 25
- 36

② If the hypotenuse of a right triangle is 15m & one leg is 10m, then what is the measure of the missing side?

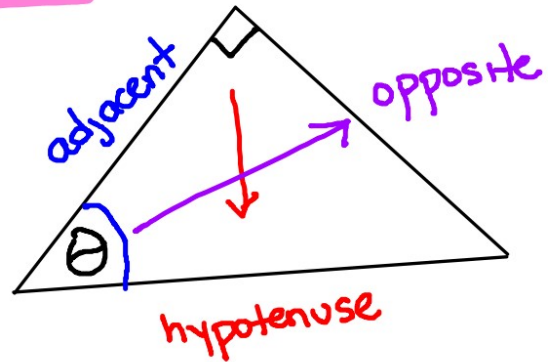
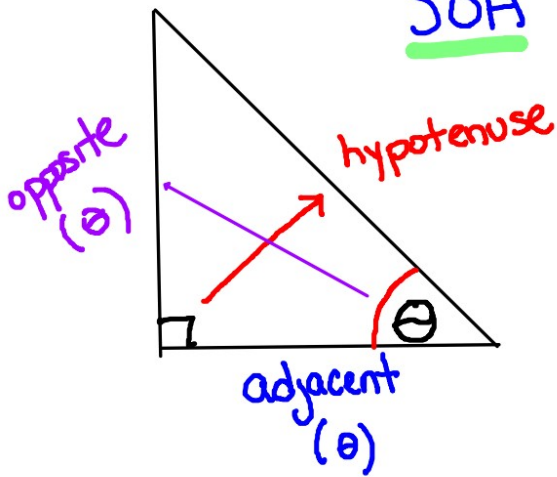
$$x^2 + 10^2 = 15^2$$
$$x^2 + 100 = 225$$
$$\begin{array}{r} -100 \\ -100 \end{array}$$
$$\sqrt{x^2} = \sqrt{125}$$

$$\sqrt{125}$$
$$\begin{array}{c} \wedge \\ \sqrt{25} \sqrt{5} \\ \downarrow \downarrow \\ x = 5\sqrt{5} \end{array}$$

Right Triangle Trigonometry

$\theta = \text{theta}$

SOH CAH TOA

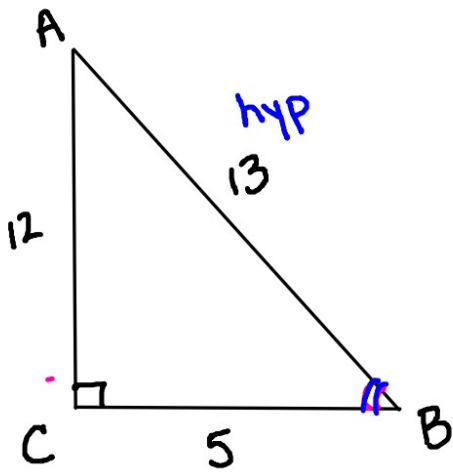


$$\text{sine } \theta \\ \sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\text{cosine } \theta \\ \cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\text{tangent } \theta \\ \tan \theta = \frac{\text{opposite}}{\text{adjacent}}$$

Example:



SOH CAH TOA

$$\sin A = \frac{5}{13}$$

$$\cos A = \frac{12}{13}$$

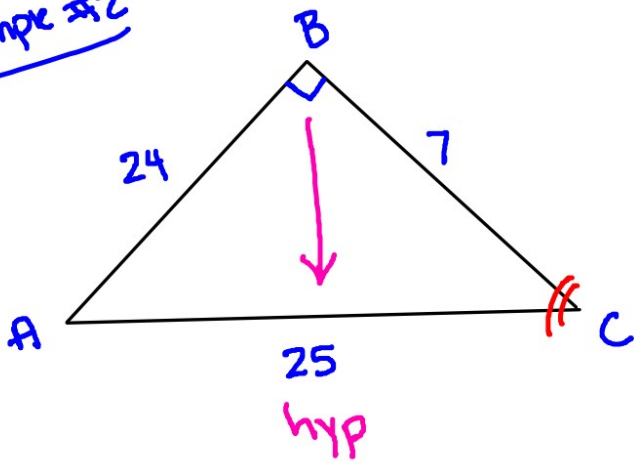
$$\tan A = \frac{5}{12}$$

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

$$\cos B = \frac{5}{13}$$

$$\tan B = \frac{12}{5}$$

Exemple #2



$$\sin A = \frac{7}{25}$$

$$\cos A = \frac{24}{25}$$

$$\tan A = \frac{7}{24}$$

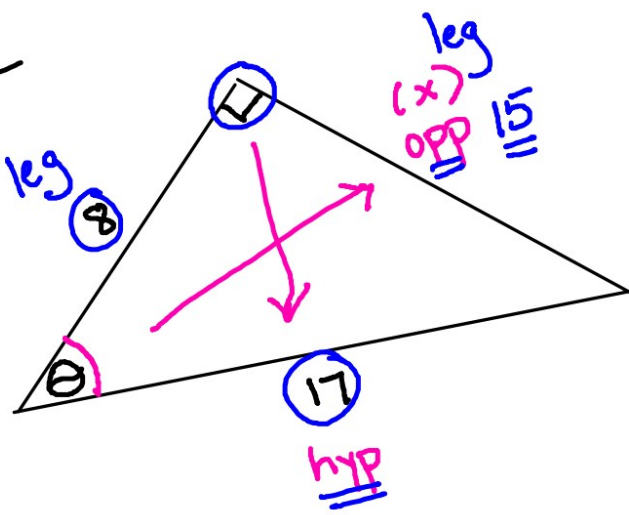
$$\sin C = \frac{24}{25}$$

$$\cos C = \frac{7}{25}$$

$$\tan C = \frac{24}{7}$$

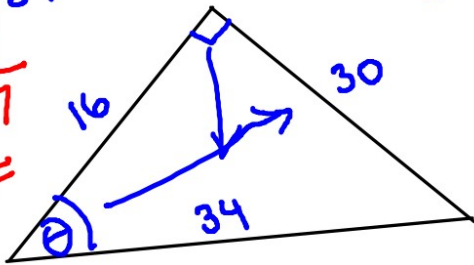
SOH CAH TOA

Example #3



$$\sin \theta = \frac{30}{34}$$

$$\sin \theta = \frac{15}{17}$$



Find $\sin \theta = \frac{15}{17}$

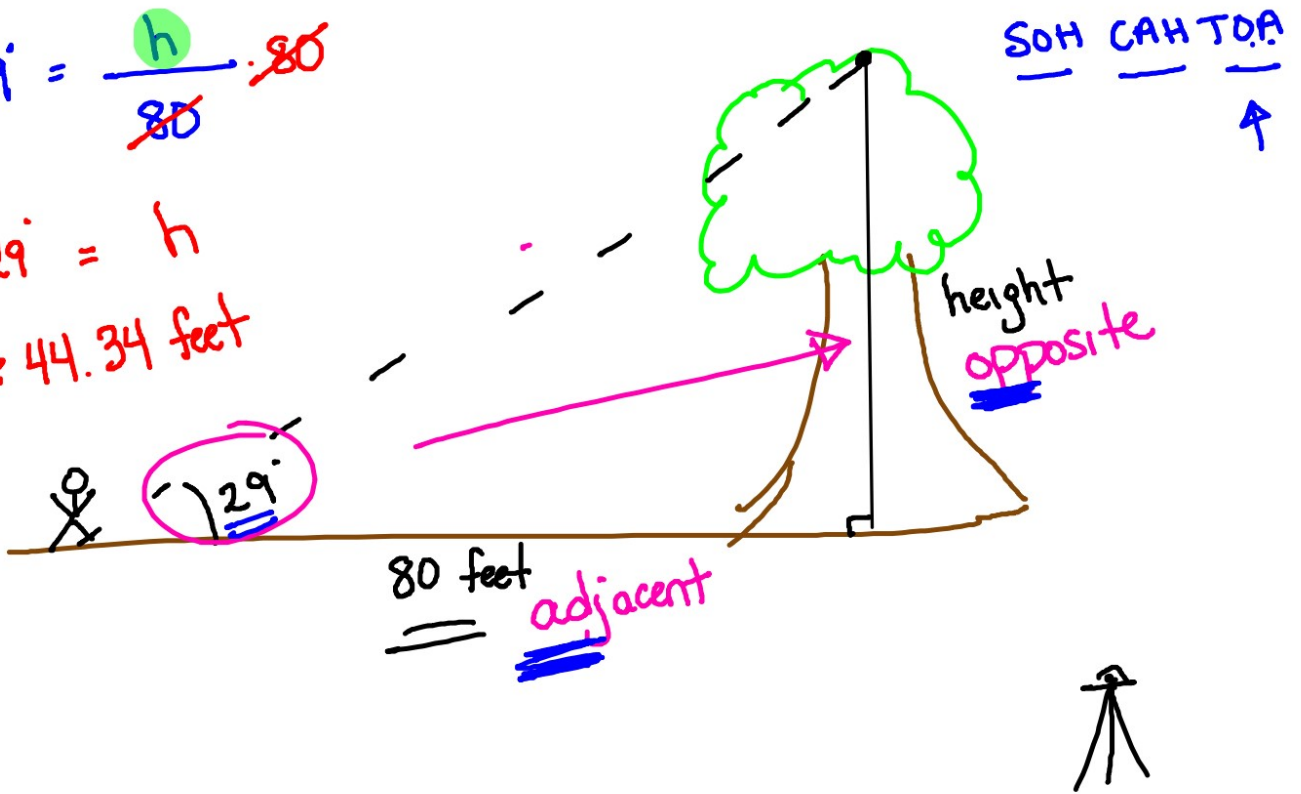
$$\begin{aligned} 8^2 + x^2 &= 17^2 \\ \cancel{64} + x^2 &= 289 \\ &\quad -64 \\ \sqrt{x^2} &= \sqrt{225} \\ x &= 15 \end{aligned}$$

SOH CAH TOA

$$0 \cdot \tan 29^\circ = \frac{h}{80} \cdot 80$$

$$80 \cdot \tan 29^\circ = h$$

$$h \approx 44.34 \text{ feet}$$



Ex:

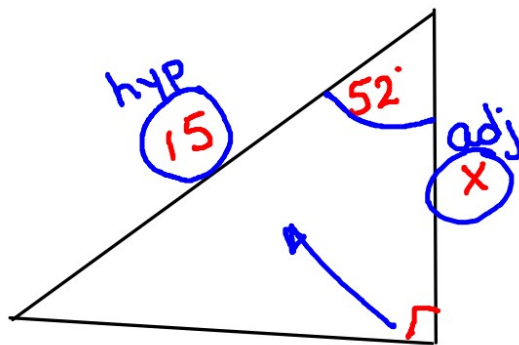
Find X:

SOH CAH TOA

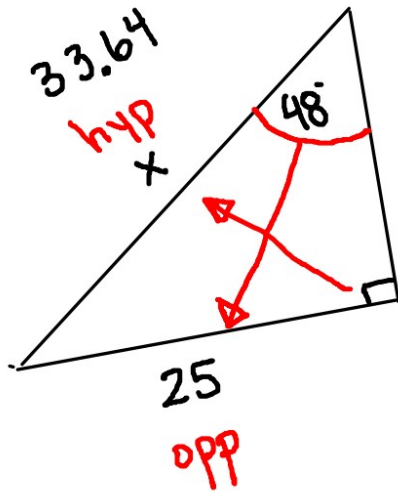
$$\cos 52^\circ = \frac{x}{15} \cdot 15$$

$$x = 15 \cdot \cos 52^\circ$$

$$x \approx \underline{\underline{9.23}}$$



Example:



SOH CAH TOA

$$\sin 48^\circ = \frac{25}{X}$$

$$\frac{X \cdot \sin 48^\circ}{\sin 48^\circ} = \frac{25}{\sin 48^\circ}$$

$$X = \frac{25}{\sin 48^\circ}$$

$$X \approx 33.64$$