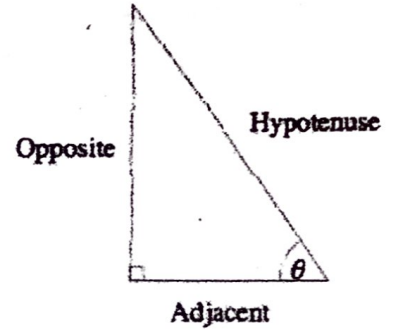


Trig Ratio Recap

For a right triangle, the sine, cosine, and tangent of the angle θ is defined as:

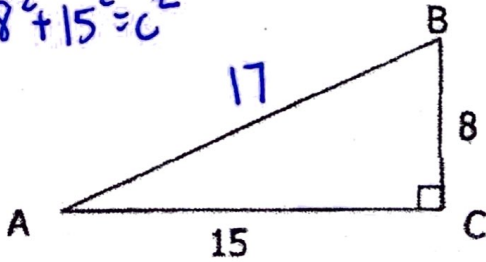
$$\sin \theta = \frac{\text{Opp.}}{\text{Hyp.}} \quad \cos \theta = \frac{\text{adj.}}{\text{hyp.}} \quad \tan \theta = \frac{\text{opp.}}{\text{adj.}}$$

Remember: **SOH CAH TOA**



Example 1 Using Trig Ratios

$$8^2 + 15^2 = c^2$$



$$\sin A = \frac{8}{17}$$

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

$$\cos A = \frac{15}{17}$$

$$\cos B = \frac{8}{17}$$

$$\tan A = \frac{8}{15}$$

$$\tan B = \frac{15}{8}$$

Example 2 Finding Missing Sides

Use trig ratios to find the missing sides of the following triangles.

<p>1.</p> <p>$\sin 70 = \frac{x}{7}$ $x = 6.6$</p>	<p>2.</p> <p>$\sin 65 = \frac{10}{x}$ $x = 11$</p>	<p>3.</p> <p>$\sin 24 = \frac{4}{x}$ $x = 9.8$</p>	<p>4.</p> <p>$\cos 55 = \frac{20}{x}$ $x = 11.5$</p>
--	--	--	--

Example 3 Finding Missing Angles

To find a missing angle in a right triangle, we must use inverse trigonometry.

DEGREE MODE!

Ex: $\sin(\text{angle}) = \text{value} \longrightarrow \sin^{-1}(\text{value}) = \text{angle}$
 $\sin(30^\circ) = 0.5 \longrightarrow \sin^{-1}(0.5) =$

Find the ? angle measure to the nearest degree.

1. $\theta = 41^\circ$

$\cos \theta = \frac{6}{8}$

2. $\theta = 37^\circ$

$\cos \theta = \frac{4}{5}$

3. $\theta = 16^\circ$

$\tan \theta = \frac{14}{48}$

4. $\theta = 28^\circ$

$\sin \theta = \frac{16}{34}$

5. $\theta = 53^\circ$

$\tan \theta = \frac{68}{51}$