

Key

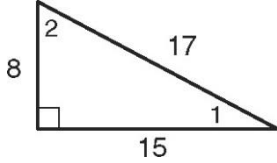
8.3 SOLVING RIGHT TRIANGLES

Trigonometry Part 2: Finding Missing Angles

8.3.a. Use a calculator to find an angle measure, given a trigonometric ratio.

8.3.b. Solve a right triangle by finding all sides and angle measures.

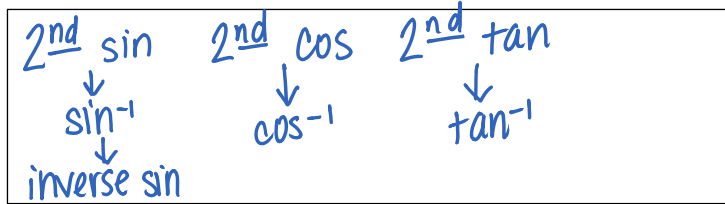
Working Backwards: Use the given trigonometric ratio to determine which angle of the triangle is A.



$$1. \sin A = \frac{8}{17} \quad \angle 1 \quad 2. \cos A = \frac{15}{17} \quad \angle 1 \quad 3. \tan A = \frac{15}{8} \quad \angle 2$$

$$4. \sin A = \frac{15}{17} \quad \angle 2 \quad 5. \cos A = \frac{8}{17} \quad \angle 2 \quad 6. \tan A = \frac{8}{15} \quad \angle 1$$

How do you find a missing angle?



Use a calculator to find the angle measure, x, to the nearest degree.

$$\sin^{-1} \sin x = \frac{2}{3}$$

$$x = \sin^{-1}\left(\frac{2}{3}\right)$$

$$x = 42^\circ$$

$$8. \cos x = 0.5$$

$$x = \cos^{-1}(0.5)$$

$$x = 60^\circ$$

$$9. \tan x = \frac{101}{90}$$

$$x = \tan^{-1}\left(\frac{101}{90}\right)$$

$$x = 48^\circ$$

$$10. \cos x = \frac{11}{16}$$

$$x = \cos^{-1}\left(\frac{11}{16}\right)$$

$$x = 47^\circ$$

$$11. \tan x = \frac{12}{5}$$

$$x = \tan^{-1}\left(\frac{12}{5}\right)$$

$$x = 67^\circ$$

$$12. \sin x = \frac{97}{145}$$

$$x = \sin^{-1}\left(\frac{97}{145}\right)$$

$$x = 42^\circ$$