

Pythagorean Identities - Step-by-Step Lesson

If $\cot \theta = \frac{2}{8}$ and $\sin \theta = \frac{8}{8.2}$

Find the values of the remaining trigonometric functions, using a Pythagorean identity.

Explanation:

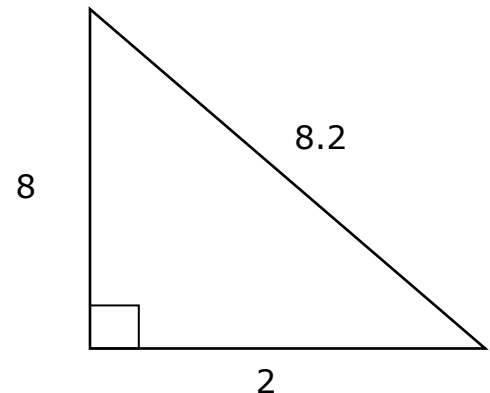
$$\cot \theta = \frac{2}{8} \rightarrow \tan \theta = \frac{8}{2}$$

$$\tan^2 \theta + 1 = \sec^2 \theta$$

$$\left(\frac{8}{2}\right)^2 + 1 = \sec^2 \theta$$

$$\frac{64}{4} + 1 = \sec^2 \theta$$

$$\sec^2 \theta = \frac{64 + 4}{4} = \sqrt{68} = 8.2$$



So, the remaining trigonometric functions are:

$$\sin \theta = \frac{8}{8.2} \qquad \csc \theta = \frac{8.2}{8}$$

$$\cos \theta = \frac{2}{8.2} \qquad \sec \theta = \frac{8.2}{2}$$

$$\tan \theta = \frac{8}{2} \qquad \cot \theta = \frac{2}{8}$$

