

Precalculus

4-04 Right Triangle Trigonometry and Identities

Basic Identities

Reciprocal

$$\sin u = \frac{1}{\csc u}$$

$$\csc u = \frac{1}{\sin u}$$

$$\cos u = \frac{1}{\sec u}$$

$$\sec u = \frac{1}{\cos u}$$

$$\tan u = \frac{1}{\cot u}$$

$$\cot u = \frac{1}{\tan u}$$

Quotient

$$\tan u = \frac{\sin u}{\cos u}$$

$$\cot u = \frac{\cos u}{\sin u}$$

Pythagorean

$$\sin^2 u + \cos^2 u = 1$$

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

$$\cot^2 u + 1 = \csc^2 u$$

Note: $\sin^2 u = (\sin u)^2$

Cofunction Identities

$$\sin(90^\circ - u) = \cos u$$

$$\cos(90^\circ - u) = \sin u$$

$$\sec(90^\circ - u) = \csc u$$

$$\csc(90^\circ - u) = \sec u$$

$$\tan(90^\circ - u) = \cot u$$

$$\cot(90^\circ - u) = \tan u$$

Let θ be an acute angle such that $\cos \theta = 0.96$

Find $\sin \theta$

$\tan \theta$

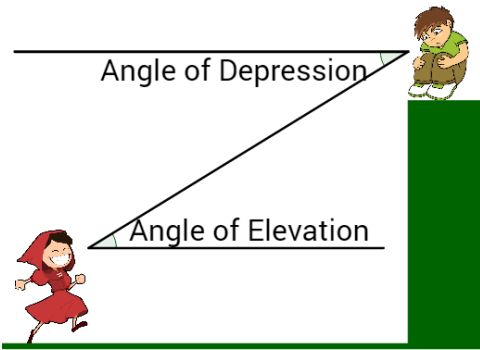
Let β be an acute angle such that $\tan \beta = 4$

Find $\cot \beta$

$\sec \beta$

Angles of Elevation and Depression

- Both are measured from the _____



A 12-meter flagpole casts a 6-meter shadow. Find the angle of elevation of the sun.