Pre Calculus: Trig. Identities

Name _____

Date _____ Period _____

Reciprocal Identities:

$\sin(u) = \frac{1}{\csc(u)}$ $\quad \csc(u) = \frac{1}{\sin(u)}$

$\cos(u) = \frac{1}{\sec(u)}$ $\quad \sec(u) = \frac{1}{\cos(u)}$

$\tan(u) = \frac{1}{\cot(u)}$ $\quad \cot(u) = \frac{1}{\tan(u)}$

Quotient Identities:

$\tan(u) = \frac{\sin(u)}{\cos(u)}$ $\quad \cot(u) = \frac{\cos(u)}{\sin(u)}$

Pythagorean Identities:

$\sin^2(u) = (\sin u)^2 \neq \sin u^2$

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

$\div \cos^2(u)$: $1 + \tan^2(u) = \sec^2(u)$

$\div \sin^2(u)$: $1 + \cot^2(u) = \csc^2(u)$

or

$\sin^2(u) = 1 - \cos^2(u)$ $\quad \tan^2(u) = \sec^2(u) - 1$ $\quad \cot^2(u) = \csc^2(u) - 1$

or

$\cos^2(u) = 1 - \sin^2(u)$

Cofunction Identities:

$(90° - u)$

$\sin(\pi/2 - u) = \cos(u)$ $\quad \cos(\pi/2 - u) = \sin(u)$

$\frac{\pi}{2} - u =$ other angle

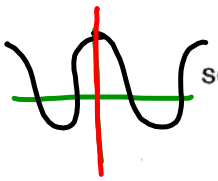
$\csc(\pi/2 - u) = \sec(u)$ $\quad \sec(\pi/2 - u) = \csc(u)$

$\tan(\pi/2 - u) = \cot(u)$ $\quad \cot(\pi/2 - u) = \tan(u)$

Even Identities:

x^2

$\cos(-u) = \cos(u)$ $\quad \sec(-u) = \sec(u)$

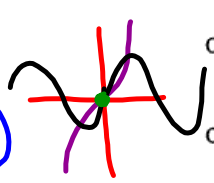


Odd Identities:

x^3

$\sin(-u) = -\sin(u)$ $\quad \csc(-u) = -\csc(u)$

$\tan(-u) = -\tan(u)$ $\quad \cot(-u) = -\cot(u)$



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