Identities Review

Sum + Product Identities

Purpose – to switch between addition/subtraction of trig fractions to multiplication of trig functions (or vice versa)

$\sin 40^\circ - \sin 100^\circ = (+)\, 2\cos 70^\circ \sin 30^\circ$

$2\cos\left(\frac{40^\circ+100^\circ}{2}\right)\sin\left(\frac{40^\circ-100^\circ}{2}\right)$

False $2\cos 70^\circ \sin(-30^\circ)$

$(-)\, 2\cos 70^\circ \sin 30^\circ$

$\cos 4x \sin 12x = \frac{1}{2}\sin 16x + \frac{1}{2}\sin 8x$

$\frac{1}{2}\left[\sin(4x+12x) - \sin(4x-12x)\right]$

True $\frac{1}{2}\left[\sin 16x + \sin(+8x)\right]$

$\frac{1}{2}\sin(16x) + \frac{1}{2}\sin(8x)$

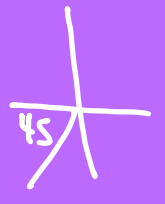
1) Write 8 fundamental identities

1-10) True/False

* Be sure to check +/- on half angle identities

11-14) Evaluate: Answer is a #.

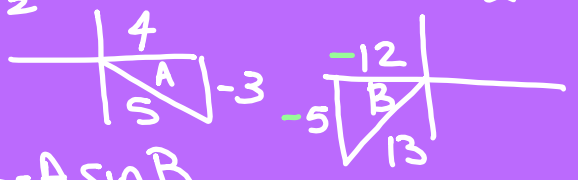
$$\frac{1-\cos 450^\circ}{\sin 450^\circ} = \tan\left(\frac{450^\circ}{2}\right) = \tan 225^\circ = +1$$



15-20 – Draw picture & fill in values.

Find $\sin(A-B)$ if $\csc A = -\frac{5}{3}$ $\frac{r}{y}$. $\cot B = \frac{12}{5}$ $\frac{x}{y}$

$\frac{3\pi}{2} < A < 2\pi$ $\pi < B < \frac{3\pi}{2}$.



$\sin(A-B) = \sin A \cos B - \cos A \sin B$

$\left(\frac{-3}{5}\right)\left(\frac{-12}{13}\right) - \left(\frac{4}{5}\right)\left(\frac{-5}{13}\right)$

$\frac{36}{65} + \frac{20}{65} = \boxed{\frac{56}{65}}$

60 10

Verify – 4 problems
(1 easy, 2 med, 1 challenge)

Hint: #31 – Use sum + product identities.