

L4 – 4.5 Prove Trig Identities

MHF4U

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Using your sheet of all identities learned this unit, prove each of the following:

Example 1: Prove $\frac{\sin(2x)}{1+\cos(2x)} = \tan x$

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Example 2: Prove $\cos\left(\frac{\pi}{2} + x\right) = -\sin x$

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Example 3: Prove $\csc(2x) = \frac{\csc x}{2 \cos x}$

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Example 4: Prove $\cos x = \frac{1}{\cos x} - \sin x \tan x$

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Example 5: Prove $\tan(2x) - 2 \tan(x) \sin^2 x = \sin 2x$

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Example 6: Prove $\frac{\cos(x-y)}{\cos(x+y)} = \frac{1+\tan x \tan y}{1-\tan x \tan y}$

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RS

