

Math 42 Additional Homework 2

Tue Feb 16, 2016

DUE Thu Feb 18, 2016 @ 12:30pm **SHARP**

NAME YOU ASKED TO BE CALLED IN CLASS:

Prove the following identities.

[1] $\tan x + \cot x = \sec x \csc x$

[2] $\tan^2 \beta + \cot^2 \beta = \sec^2 \beta \csc^2 \beta - 2$

[3] $\sin^4 A + \cos^2 A = \cos^4 A + \sin^2 A$

[4] $\sec(-t) - \cos(-t) - \csc(-t) + \sin(-t) + \sin t \tan(-t) = \cos t \cot t$

$$[5] \quad (\tan \lambda - \sec \lambda \csc \lambda)(\cot \lambda - \sec \lambda \csc \lambda) = 1$$

$$[6] \quad \frac{\cos^4 \theta - \sin^4 \theta}{\cos^2 \theta} = 1 - \tan^2 \theta$$

$$[7] \quad \frac{\sin B + \tan B}{1 + \cos B} = \tan B$$

$$[8] \quad \frac{\cot y - \tan y}{\cos y + \sin y} = \frac{\cos y - \sin y}{\cos y \sin y}$$

$$[9] \quad \frac{1 - \sin \alpha}{\cos \alpha} = \frac{1}{\sec \alpha + \tan \alpha}$$

$$[10] \quad \frac{(\sec C - \tan C)^2 + 1}{\sec C \csc C - \tan C \csc C} = 2 \tan C$$