Math 42 Additional Homework 2

Mon Feb 13, 2017
DUE Tue Feb 21, 2017 @ 9:35am SHARP

NAME YOU ASKED TO BE CALLED IN CLASS:

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Prove the following identities. **NOTE: One or more of these will appear on Quiz 3, Midterm 3 and/or the Final Exam.**

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

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

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

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

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

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