Section 5.2

Problem 1. Verify the identity.

a) $\cot^2 y\,(\sec^2 y - 1) = 1$

b) $\cos^2 \beta - \sin^2 \beta = 2\cos^2 \beta - 1$

c) $\cos x + \sin x \tan x = \sec x$

d) $\frac{\cot^3 t}{\csc t} = \cos t\,(\csc^2 t - 1)$

e) $\frac{\sec \theta - 1}{1 - \cos \theta} = \sec \theta$

f) $\sec x - \cos x = \sin x \tan x$

g) $\frac{1+\sin\theta}{\cos\theta} + \frac{\cos\theta}{1+\sin\theta} = 2\sec\theta$

h) $\cos x - \frac{\cos x}{1-\tan x} = \frac{\sin x \cos x}{\sin x - \cos x}$

i) $\frac{\tan x + \tan y}{1-\tan x \tan y} = \frac{\cot x + \cot y}{\cot x \cot y - 1}$

j) $\sec^4 x \tan^2 x = (\tan^2 x + \tan^4 x)\sec^2 x$

Homework: Read section 5.2, do #11, 15, 25, 27, 29, 35, 47