MATH 6 – RECITATION WORKSHEET 10
27 APRIL 2012

Today we'll look at how trig identities can help you solve calculus problems.

1. (a) Find the derivative of $f(x) = \sin x \cos x$ using rules of derivatives.
   (b) Rewrite $\sin x \cos x$ using a trig identity.
   (c) Take the derivative of the expression you found. Do your answers agree? Which method do you prefer?

2. (a) Find the derivative of $f(x) = \sec^2 x - \tan^2 x$ using rules of derivatives.
   (b) Rewrite $\sec^2 x - \tan^2 x$ using a trig identity.
   (c) Take the derivative of the expression you found. Do your answers agree? Which method do you prefer?

3. Compute the following integral by first rewriting the integrand using a trig identity, and then using substitution.

$$\int \sin^3 x \, dx$$

4. Compute the following integral by first rewriting the integrand using a trig identity.

$$\int \cos^2 x \, dx$$

5. Compute the following integral by first rewriting the integrand using a trig identity.

$$\int \tan^2 x \, dx$$