

Name: _____

MA2 Homework 2

1. Show that $\frac{d}{dx}(\cot x) = -\csc^2 x$.

2. Show that $\frac{d}{dx}(\tan x) = \sec^2 x$.

3. Determine the equation of the tangent line to $y = \sin x$ at $x = \frac{2\pi}{3}$.

4. Find $f'(x)$ if $f(x) = x^2 \tan x$.

5. Find $f'(x)$ if $f(x) = \sin^3(9x + 1)$.

6. Find dy/dx if $y = 4 \tan^2(\cos x)$.

7. Find dy/dx if $y = 3x - \frac{1}{4} \cos^2(4\pi x)$.