1. Chapter 3 Section 5: The Trigonometric Functions

Formulas:

(1) $\frac{d}{dx}[\sin(x)] =$

(2) $\frac{d}{dx}[\cos(x)] =$

(3) $\frac{d}{dx}[\tan(x)] =$

Example 1.1. *Find the derivative of* $f(\theta) = \sin(\theta^2) + \sin^2(\theta)$.

Example 1.2. *Prove the formula in this section for* $\frac{d}{dx}\tan x$ *using the rules for* $\sin x$, $\cos x$ *and/or rules covered in prior sections.*

Example 1.3. *Find the line tangent to* $f(t) = 3\tan(\pi t) + 5$ *at the point where* $t = 1/4$.