Project 3 Writing An Assessment

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Math 696 Mathematical Communication and Technology

June 11, 2025

Problem 1. Given that $\tan(x) = \frac{\sin(x)}{\cos(x)}$, $\sin'(x) = \cos(x)$, $\cos'(x) = -\sin(x)$, $\left(\frac{f(x)}{g(x)}\right)' = \frac{f'(x)g(x)-f(x)g'(x)}{g^2(x)}$, and the identity $\sin(x)^2 + \cos(x)^2 = 1$, what is the derivative of $\tan(x)$?

(a) $\frac{\cos(x)}{\sin(x)}$

(b) $\frac{1}{\sin(x)^2}$

(c) 1

(d) $\frac{1}{\cos(x)^2}$

(e) 0