

Math 1300
Fall 2025
Quiz 6

Name: _____

1. (2 points) If $f(x) = \cos(\tan(x))$, compute $f'(x)$.

(a) $f'(x) = \cos^2(x) - \sin^2(x)$

(b) $f'(x) = \cos(x) \cos(\tan(x))$

(c) $f'(x) = -\sin(x) \cos(\tan(x))$

(d) $f'(x) = -\sin(\tan(x)) \sec^2(x)$

(e) $f'(x) = -\sin(\sec^2(x))$

2. (3 points) Compute $\frac{d}{dx} \left(\sin(e^{\sqrt{x}}) \right)$.

Answer:

3. (5 points) Consider the curve defined by $y^2 = \sin(x + y)$.

(a) (3 points) Use implicit differentiation to compute $\frac{dy}{dx}$.

(b) (2 points) Find the equation of the tangent line to the curve at the point $(\pi, 0)$.