

MTH 251Z Lab

Derivatives of Trigonometric Functions

Damien Adams

Prompts

1. Find $\frac{d}{dy} (\sqrt{y} \cos y)$
2. Find $f'(y)$ if $f(y) = 2 \sin y e^y$
3. Find $\frac{d}{dx} \left(\frac{\tan x}{x^2 + 1} \right)$
4. Find y' if $y = 2 \sin t \cos t$
5. Find the equation of the line tangent to $y = \sin x$ at the point $\left(\frac{\pi}{4}, \frac{\sqrt{2}}{2} \right)$.
6. Find the equation of the line tangent to $y = 2 \sin x \cos x$ at the point $(\pi, 0)$.
7. Find $\frac{dy}{dx}$ if $y = x^2 \sin x \sec x$
8. Find $\frac{dy}{dx}$ if $y = \frac{7e^x}{\cot x}$
9. Find $g'(t)$ if $g(t) = \frac{2 \csc t}{3t^2}$
10. Find $\frac{d}{dx} \left(\frac{5 \cot x}{\sqrt[3]{x}} \right)$