

10360 Differentiation Quiz - 35 mins - No Calculators Allowed.

1. Find the derivative of the following functions

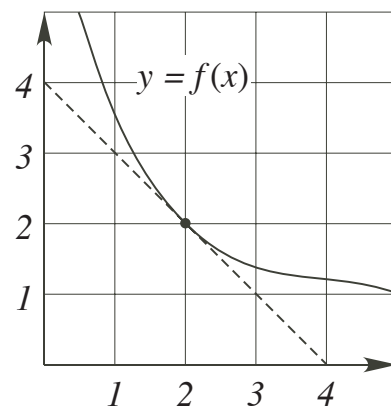
1a. $y = \sec^3(2x)$

1b. $f(x) = \sin^2(x) \cos(3x)$

1c. $g(x) = \frac{e^x - 1}{e^{2x} + 5}$

2. Find the slope function of $y = (1 + x^2)^{2x}$.

3. The graphs of the function $f(x)$ and its tangent line at $x = 2$ are given below. Find the derivative of the function $Q(x) = \frac{f(x)}{x+1}$ at $x = 2$.



4. Consider the curve given by

$$x^2e^y - 2y^2x + 5x^3 = 6.$$

Find $\frac{dy}{dx}$.