

Quiz 6

Find the slope of the line tangent to the graph of

$$f(x) = \left(\frac{2x + 1}{4x - 3}\right)^2$$

at the point $(1, f(1))$.

Solution: Use the chain and quotient rules to find that

$$f'(x) = 2 \left(\frac{2x + 1}{4x - 3}\right) \left(\frac{2(4x - 3) - 4(2x + 1)}{(4x - 3)^2}\right)$$

whose value at $x = 1$ is $f'(1) = 6 \cdot (-10) = -60$.