

WRITE YOUR NAME:

MAC 2311 Quiz 2
Wednesday February 22nd

Question 1. Find the derivative of the function, and simplify.

$$f(x) = \frac{x^2 + 1}{3x + 5} = \frac{u}{v}$$

$$\left(\frac{u}{v}\right)' = \frac{u'v - uv'}{v^2}$$

$$f'(x) = \frac{(x^2 + 1)'(3x + 5) - (x^2 + 1)(3x + 5)'}{(3x + 5)^2}$$

$$= \frac{2x \cdot (3x + 5) - (x^2 + 1) \cdot 3}{(3x + 5)^2}$$

$$= \frac{6x^2 + 10x - (3x^2 + 3)}{(3x + 5)^2}$$

$$= \frac{6x^2 + 10x - 3x^2 - 3}{(3x + 5)^2}$$

$$= \frac{3x^2 + 10x - 3}{(3x + 5)^2}$$