Quiz L12-15

Name:
UF ID:
Section Number:

1) Let \( f(x) = 2x^2 + x - 1 \). Use the **limit definition** of the derivative to find \( f'(x) \). (2 pts)

2) Let \( f(x) = 3x^5 + 2x^2 \). Find all \( x \) values such that \( f(x) \) has a horizontal tangent line. (3 pts)

2) Let \( f(x) = \frac{3x}{5 + 2x^2} \). Find all \( x \) values such that \( f(x) \) has a horizontal tangent line. (3 pts)
3) Let

\[ g(x) = \frac{1}{x + 1} + 3e^x + \sqrt{x}\sin(x) + 46x - 20 \]

Find \( g'(x) \) and its domain. (3 pts)