Write the best answer to each question in the box provided. Show your work.

1. Calculate \( \int (3x^2 + 1)e^{-2x} \, dx \).

2. Find the average value of the function \( 3x^2 − 4x \) on \([1, 3]\).

3. Let \( f(x) = 100e^{1.05x} \) be the rate of change of a continuous money flow. Calculate the present value of the money flow at an interest rate of 5% compounded continuously for 10 years.