MAT136 – Practice Test 1

1. Let $P_2(x) = -3 + 5x - 7x^2$ be the degree-2 Taylor polynomial of $y = f(x)$ centered at $x = 0$. Let $L(x)$ be the linear approximation of $f(x)$ at the point where $x = 0$. Based on this information, do we expect $L(0.01)$ to be an over-approximation or under-approximation of the actual value of $f(0.01)$?

2. Let $f(x) = 4x^2 + 5x + 6$. Apply the formula for calculating the Taylor Polynomials to $f(x)$ to compute the Taylor polynomial of degree 100 centered at 1. Write the resulting polynomial.