Quiz 7

Spring 2016

MATH 222-004

Name: _____

For full credit please explain all of your answers. **No calculators** are allowed.

Problem 1. A philanthropist endows a chair. This means that she donates $\$1,000,000$ to the university. The university invests the money (it earns compounded continuously interest). Denote the interest rate on the investment by r (e.g. if r=.06, then the investment earns interest at a rate of 6% compounded continuously) and the balance in the investment account at time t by $B(t)$.

Write and solve a differential equation for $B(t)$ using the initial condition.

Problem 2. Compute $T_0^{e^2} f(x), T_1^{e^2} f(x), T_2^{e^2} f(x)$ for $f(x) = \ln(x)$.