

Math 301 Quiz #7 Summer 2014

Name:..... ID:.....

Exercise # 1: Use the Laplace transform to solve

$$\left\{ \begin{array}{l} \frac{\partial^2 u}{\partial t^2} = 3 \frac{\partial^2 u}{\partial x^2}, \quad x > 0, \quad t > 0 \\ u(0, t) = 0, \quad u(x, t) \rightarrow 0 \text{ as } x \rightarrow \infty, \text{ for } t \geq 0 \\ u(x, 0) = x e^{-x}, \quad u_t(x, 0) = 0, \quad x \geq 0 \end{array} \right.$$