

Math 301-02 Quiz #8

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

Exercise #1: Solve the initial boundary value problem

$$\left\{ \begin{array}{l} \frac{\partial^2 u}{\partial t^2} = 2 \frac{\partial^2 u}{\partial x^2}, \quad 0 < x < 1, \quad t > 0 \\ u(0, t) = 0, \quad u(1, t) = 0, \quad t \geq 0 \\ u(x, 0) = 0, \quad 0 < x < 1 \\ u_t(x, 0) = \sin(3\pi x), \quad 0 < x < 1 \end{array} \right.$$