

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

Exercise # 1: Use the method of separation of variables to solve the heat initial boundary value problem.

$$\begin{cases} \frac{\partial^2 u}{\partial x^2} = 5 \frac{\partial u}{\partial t}, & 0 < x < 1, t > 0 \\ u_x(0, t) = 0, \quad u(1, t) = 0, & t > 0 \\ u(x, 0) = h(x), & 0 < x < 1 \end{cases}$$