HOMEWORK #34 (M427K FALL 2004)

You are supposed to solve for $u(x,t)$ in the Heat equation (defined on the interval $0 \leq x \leq \pi$) (Partial Differential Equation)

$$\frac{\partial u}{\partial t} = k\frac{\partial^2 u}{\partial x^2}$$

Using the following "initial+boundary" conditions:

1) $u(0,t) = 0$

2) $u(\pi,t) = 0$

3) $u(x,0) = f(x) = \sin(3x) + x^2$