

## Homework 1

Using the method of separation of variables, solve the following PDE

$$\frac{\partial u}{\partial t} = 3\frac{\partial^2 u}{\partial x^2} - 6u,$$

The boundary conditions are given on the interval  $[0, \pi]$

$$\frac{\partial u}{\partial x}(0, t) = 0, \quad u(\pi, t) = 0,$$

and the initial condition is

$$u(x, 0) = f(x).$$

**To be handed in before 5 p.m., February 11.**