

## Math 470- Quiz 3

ID. Num.:

Name:

**Question:** Consider the following initial boundary value problem:

$$u_t = u_{xx}, \quad x \in (0, \pi), \quad t > 0$$
$$u_x(0, t) = 0, \quad u_x(\pi, t) = 0, \quad t \geq 0; \quad u(x, 0) = f(x), \quad x \in [0, \pi].$$

(1) Give a physical interpretation of the above problem?

(2) Derive the solution of the above problem.