**Dr. Z.'s Math 421(1), (Fall 2014, RU) REAL Quiz #8**

**NAME:** (print!) _____

**E-MAIL ADDRESS:** (print!) _____

**1.** Solve the boundary value problem

$$7\frac{\partial^2 u}{\partial x^2} = \frac{\partial u}{\partial t} \quad , \quad 0 < x < \pi \quad , \quad t > 0 \quad ,$$

subject to

$$u_x(0,t) = 0 \quad , \quad u_x(\pi,t) = 0 \quad , t > 0$$

$$u(x,0) = f(x) \quad , \quad 0 < x < \pi \quad ,$$

where

$$f(x) = \begin{cases} 0, & \text{if } 0 \le x < \pi/2; \\ 2, & \text{if } \pi/2 \le x < \pi; \end{cases}$$

(You may use the ready-made formula)