Math 407 Homework 11-Due April 7 K.A. Pericak-Spector

You must attach this page to your homework set. You must print complete names clearly, and the person who wrote up the problems should sign as writer. Please put problems in order and staple in upper left-hand corner.
(Print names)

1. _____ 2. _____

3. _____

Writer: _____

Group Number _____

1. On homework 9 you found a solution for

$$\begin{aligned} u_{tt} + 4u_t &= 4u_{xx} \\ u(0,t) &= u(3,t) = 0 \\ u(x,0) &= 2\sin\frac{\pi x}{3} - 3\sin \pi x \\ u_t(x,0) &= 8\sin\frac{4\pi x}{3} \end{aligned}$$

Prove uniqueness for this problem.

2. Solve

$$\begin{aligned} u_{tt} &= \frac{1}{4}u_{xx} \\ u(0,t) &= u(5,t) = 0 \\ u(x,0) &= 0 \\ u_t(x,0) &= x(x-5) \end{aligned}$$