

EE 534 NUMERICAL METHODS IN ELECTROMAGNETICS
HW3

Date: 29.04.2015

Due: 06.05.2015

1) Use the finite difference method to solve the wave equation

$$u_{tt}(x,t) = 4u_{xx}(x,t) \text{ for } 0 < x < 1 \text{ and } 0 < t < 0.2$$

$$u(0,t) = 0, u(1,t) = 0 \text{ for } 0 \leq t \leq 0.2$$

$$u(x,0) = \sin(\pi x) + \sin(2\pi x) \text{ for } 0 \leq x \leq 1$$

$$u_t(x,0) = 0 \text{ for } 0 \leq x \leq 1.$$