Math215

Homework 7, Problem 3

November 29, 2021

11.3 Problem 9

$$f(x,t) = e^{-t}cos(\pi x)$$

$$f_x(x,t) = e^{-t}\frac{\partial}{\partial x}(cos(\pi x)) = e^{-t}\pi(-sin(\pi x)) = -\pi e^{-t}sin(\pi x)$$

$$f_t(x,t) = cos(\pi x)\frac{\partial}{\partial x}(e^{-t}) = cos(\pi x)(-1)e^{-t} = -e^{-t}cos(\pi x)$$

$$f_x(x,t) = -\pi e^{-t}sin(\pi x) \tag{1}$$

$$f_t(x,t) = -e^{-t}cos(\pi x) \tag{2}$$