1 215 Homeowk 7 Problem 5

find the first partial derrivatives of:

$f(x, y) = \frac{x}{y}$

$\frac{\partial}{\partial x} f(x, y) = \frac{\partial}{\partial x} \frac{x}{y} = \frac{1}{y} \frac{\partial}{\partial x} x = \frac{1}{y}$

$\frac{\partial}{\partial y} f(x, y) = \frac{\partial}{\partial y} \frac{x}{y} = x \frac{\partial}{\partial x} \frac{1}{y} = ln|y| = xln|y|$

Math 215 Homework 5

Find the first partial derivatives of the function $f(\text{x,t}) = \sqrt{x}\,\ln(\text{t})$

$f_x(\text{x,t}) = \frac{1}{2}\text{x}^{-\frac{1}{2}}\,\ln(\text{t})$

$f_t(\text{x,t}) = \sqrt{x}\,\frac{1}{t}$

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11.3 Problem 9

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

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

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

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

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