Calc 3 HW

Note Title 3/22/2013

(1) How many n-th order partial derivatives does a function $f(x,y)$ have? How about a function $f(x,y,z)$?

(2) Find all 2nd-order partial derivatives of:

a) $f(x,y) = x^3y^5 + 2x^4y$

b) $f(x,y) = x e^{xy}$

c) Verify that $f_{xy} = f_{yx}$ in the above examples.

(3) Find the given partial derivative:

a) $f(x,y,z) = xy^2z^3$; f_{xyz}

b) $f(x,y) = \sin(xy)$; f_{xxy}

c) $f(x,y) = x^4 + x^2y^2 + 5xy^3$; f_{xxyyxx}