MATH 130 QUIZ 10 11/14/2011

Name_____ Section 0251

Answer all problems. There are 10 possible points.

1. For nonnegative x and y, give the maximum value of $P = 3xy^2$ relative to the constraint $x + y = 100$ by performing the following (2pts each):

   a) Solve $x + y = 100$ for x and substitute into P. Give the domain of this new P

b) Find $\frac{dP}{dy}$ and solve $\frac{dP}{dy} = 0$

c) Find the maximum P relative to the values found in b) and the domain found in a)

2. Find $\frac{dy}{dx}$ by implicit differentiation for each of the following (2pts each):

   a) $x^2 + 3y^3 = 5x$

   b) $x^2e^y + y^2 = 3x$