

HW # 10

due Wednesday November 16

12.2 # 3, 5, 13, 15, 21, 27

12.3 # 1, 3, 7, 9, 17, 19

12.4 # 1, 4, 9, 11, 14

**Extra Problems**

In each of the following use Newton's method to calculate the first approximate solution  $(x_1, y_1)$  for a critical point of  $f(x,y)$ , starting from the given approximate solution  $(x_0, y_0)$ .

$$1) f(x,y) = x^2 + y^3x + 2xy - 5x - 6y \quad (x_0, y_0) = (1, 1)$$

$$2) f(x,y) = 2x^3 + y^3 + 4x^2y + 2xy^2 - 2y \quad (x_0, y_0) = (-1, 1)$$