Name _____

Homework 15
Sections 15.1 & 15.2

1. (6) Find the local extrema and saddle points of $f(x, y) = \frac{1}{2}x^4 - 2x^3 + 4xy + y^2 - 2$.

2. (7) Bob wants to ship a rectangular package via a particular shipping company. The company charges an additional surcharge if the girth (sum of the length, width, and height) of a package is more than 105 inches. Determine the maximum volume of a box that Bob can ship without paying the surcharge.

3. (7) Find and classify the critical points of $g(x, y) = 8xy - \frac{1}{4}(x + y)^4$.