

Name _____

Homework 14
Section 15.1

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) Find the local extrema and saddle points of $f(x, y) = \frac{4y + x^2y^2 + 8x}{xy}$.

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

Bonus Find the points on the graph of $x^3y^2z = \sqrt{108}$ that are closest to the origin.