Math 220 Quiz 4

Name: _____

1. (1999 Exam 2, 10 points) Suppose that $w = x^2 - 2y^2$, where $x = r\cos\theta$ and $y = r\sin\theta$. Without expressing w in terms of r and θ, find a formula for $\frac{\partial w}{\partial \theta}$ in terms of r and θ.

2. (1999 Exam 2, 10 points) If $f(x, y) = x^2 - xy - y^2 + 5y - 1$, then find and classify the critical points of f.