Math 107 Honors (Quiz 10) **Name** _____.

1. (10 points) Find and classify the critical points of $f(x, y) = x^2 - 4xy + y^3 + 4y$.

2. (10 points) Find the volume of the largest rectangular box that has three of its vertices on the positive $x-$, $y-$, and $z-$ axes, respectively, and a fourth vertex on the plane $2x+3y+4z = 12$.