

### Calculus III Quiz 4

Don't forget to write down clearly your **Name**:

and **Net Id**:

**1. Directional derivative (5 points).** Find the directional derivative of the function  $f(x, y) = 3x^2 - 2y^3$  at the point  $(1, 1)$  in the direction that makes an angle of  $120^\circ$  with respect to the positive  $x$ -axis.

**2. Critical points (5 points).** Find the critical point(s) of the function  $f(x, y) = \ln(25 - x^2 - y^2)$