

Show all work. 5 points each.

1. Find and sketch the domain of the function  $f(x, y) = \frac{\sqrt{y - x^2}}{x^2 - 1}$ .

2. Find the partial derivative  $f_x(3, 4)$  of  $f(x, y) = \ln(x + \sqrt{x^2 + y^2})$ .