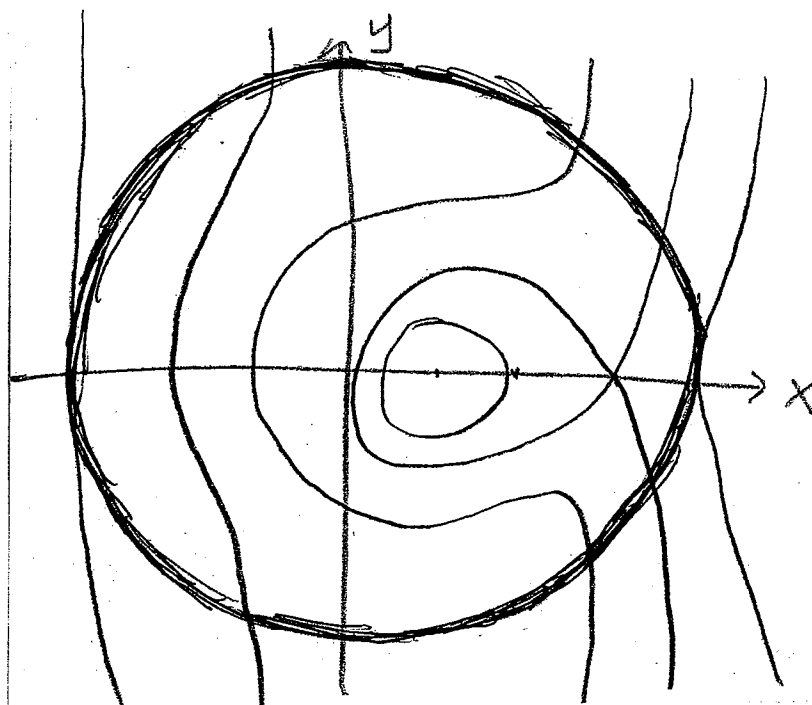


Quiz 6* - Math 53
October 9, 2008

Name _____

1a)[3pts] Consider the function $f(x, y) = 2 \ln(x^2 + y^2 + 3) - x$ defined on the domain $x^2 + y^2 \leq 16$. Find the critical points of $f(x, y)$ on this domain.

1b)[3pts] Below is an "artist's rendition" of the level sets of $f(x, y) = 2 \ln(x^2 + y^2 + 3) - x$. Based on this sketch, determine which points on the boundary circle $x^2 + y^2 = 16$ are candidates to be minima or maxima? Justify your answer.



2)[3pts] State the second derivative test.