Calculus III
Homework on Lecture 8

1. Find the limit or show that it does not exist. The answer key has not been proofread, use with caution.

   (a) $\displaystyle \lim_{(x,y)\to(0,0)} \frac{y^4}{x^4 + 2y^2}$.

   (b) $\displaystyle \lim_{(x,y)\to(0,0)} \frac{x^2 + (\ln(1+y))^2}{x^2 + y^2}$.

   (c) $\displaystyle \lim_{(x,y)\to(0,0)} \frac{x^2 \ln(1+y)}{x^2 + y^2}$.

   (d) $\displaystyle \lim_{(x,y)\to(0,0)} \frac{x^2 y^4}{x^4 + y^8}$.