

The majority of the credit you receive will be based on the completeness and the clarity of your responses. **Show all of your work and justify your solutions as much as possible.**
This is a 15 minute quiz and has 2 questions, for a total of 10 points

(5 points) 1. Determine if $\lim_{(x,y) \rightarrow (0,0)} \frac{2x^2y}{x^4 + y^2}$ exists. If it exists, find it's limit.

(5 points) 2. Show that $\lim_{(x,y) \rightarrow (0,0)} \frac{4xy^2}{x^2 + y^2} = 0$. (You do not need to check different paths.)