Let $f(x,y) = \dfrac{6x^3y}{2x^4+y^4}$, and consider $\lim\limits_{(x,y)\to(0,0)} f(x,y)$.

1. Find the limit as you approach the origin along the x-axis.
2. Find the limit as you approach the origin along the y-axis.
3. Find the limit as you approach the origin along the line $y = x$.
4. Find the limit as you approach the origin along the line $y = mx$.
5. Use a 3-D plot and a contour plot to explain the behavior of f near the origin.