Provide a clear and organized presentation. Use our rigorous definition of the limit to prove that:

1. $\displaystyle \lim_{(x,y)\to(0,0)} \frac{3x^2 y^3}{\sqrt[4]{x^2 + 2y^2}} = 0$ 2. $\displaystyle \lim_{(x,y)\to(0,0)} \left(e^{\sqrt[5]{x^2+y^2}} - 1 \right) = 0$