MATH 112A Review: Laplace and Polar Coordinates

1. Let $f(x,y) = xy + x^2 y$. What is Δf?

2. Let $f(x,y) = e^{\sqrt{x^2+y^2}}$. What is Δf in polar coordinates?

3. Let $f(x,y,z) = xyz$. What is Δf?