1. The critical points of the function $f(x, y) = x^3 + y^3 - 3xy$ are $(0, 0)$ and $(1, 1)$. Determine whether each point is a local maximum, a local minimum, or a saddle point.

2. Find the absolute maximum and minimum values of $f(x, y) = x^2 + 2xy - 2y - 2x$ in the closed triangular region with vertices $(0, 0)$, $(2, 2)$, and $(2, -2)$.