Please show all of your work.

1. Find the critical points of the function. Then use the Second Derivative Test to determine whether they are local minima or maxima.

\[ f(x, y) = x^3 + 2xy - 2y^2 - 10x \]
2. Find the minimum and maximum values of the function subject to the given constraint.

\[ f(x, y) = 2x + 3y, \quad x^2 + y^2 = 4 \]