Saddle: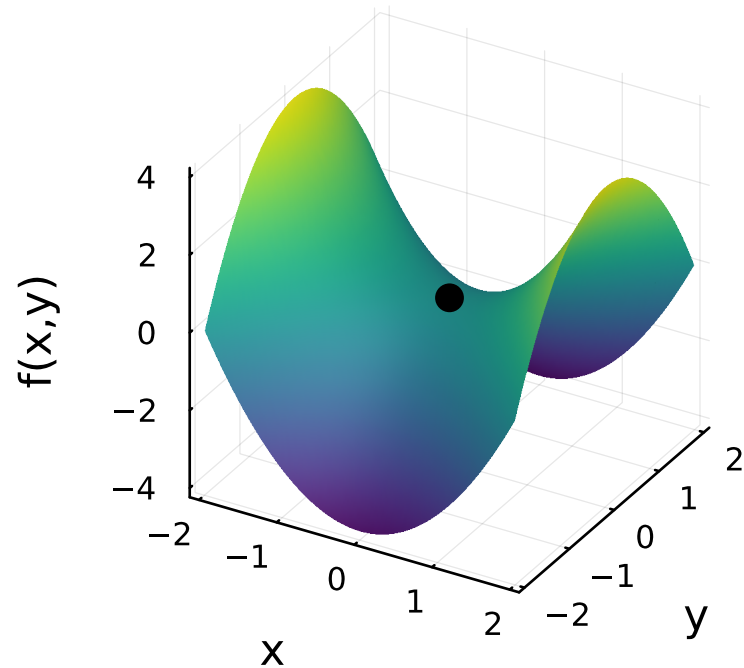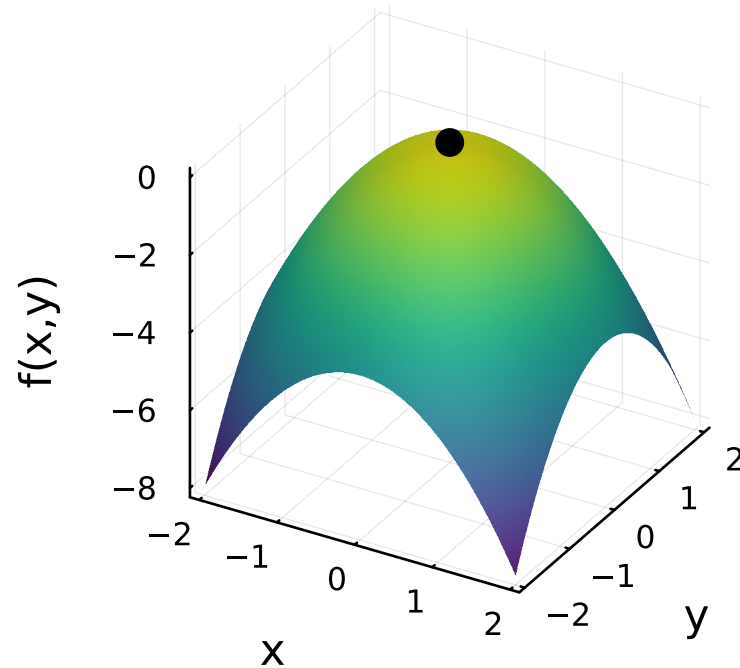 $f(x, y) = x^2 - y^2$ **Local max:** $f(x, y) = -x^2 - y^2$ **Local min:** $f(x, y) = x^2 + y^2$