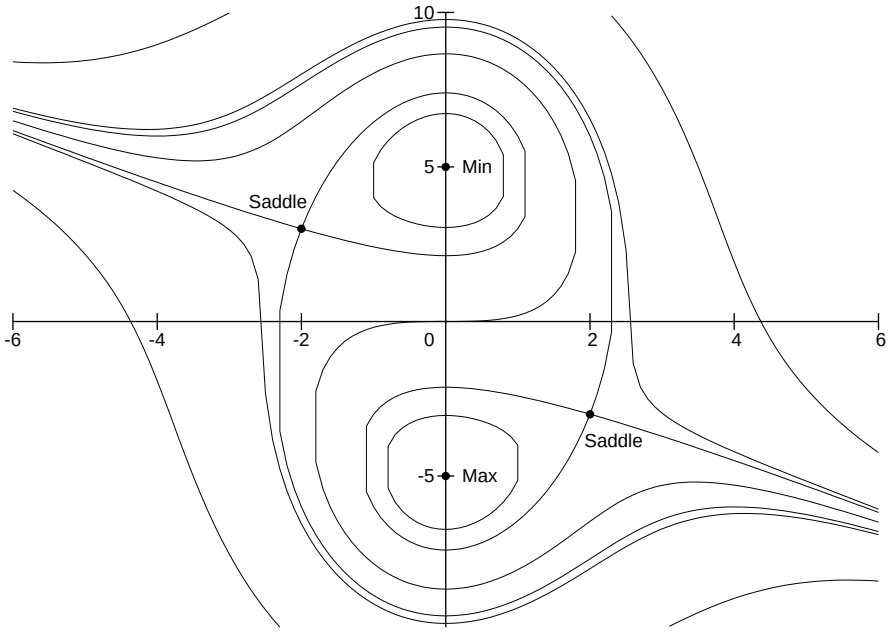
B3D Handout 7: Surface with critical points

We are looking at the surface $z = f(x, y) = 12x^3 + y^3 + 12x^2y - 75y$, which has a maximum at (0,-5), a minimum at (0,5) and saddles at both (-2,3) and (2,-3).

The contours of the function are:



The surface itself (the middle of the region shown in the contour plot) is shown here: it's rather harder to work out exactly what you're looking at!