1. Consider the surface $z = x^2 - y^2$.

   (a) Sketch the traces in the yz-plane, the xz-plane, the xy-plane and the planes $z = \pm 1$, $z = \pm 2$.

   (b) Use your traces to sketch a graph of the surface.

   (c) Check your sketch on Maple. Again, experiment with `implicitplot3d` versus `plot3d`.

   This is a *hyperbolic paraboloid.*

2. Find the equation of a hyperboloid of two sheets extending along the y-axis with vertices at $(0, 4, 0)$ and $(0, -4, 0)$.