

1. Consider the surface  $-x^2 - y^2 + z^2 = 1$ 
  - 1.1 Sketch the traces in the  $yz$ -plane, the  $xy$ -plane, and the planes  $z = \pm 1$ ,  $z = \pm 5$ .
  - 1.2 Use your traces to sketch a graph of the surface, and verify your graph using Maple. This is a *hyperboloid of two sheets*.
  
2. Consider the surface  $z = x^2 - y^2$ .
  - 2.1 Sketch the traces in the  $yz$ -plane, the  $xz$ -plane, the  $xy$ -plane and the planes  $z = \pm 1$ ,  $z = \pm 2$ .
  - 2.2 Use your traces to sketch a graph of the surface, and verify your graph using Maple. This is a *hyperbolic paraboloid*.