(i) Find the traces of the surface $4y^2 - x^2 - z^2 = 4$ in the planes $x = k, y = k$ and $z = k$. Then identify the surface and sketch it.

(ii) Let $f(x, y, z) = e^{\sqrt{z - x^2 - y^2}}$.
(a) Find and sketch the domain.
(b) Find the range of $f$. 