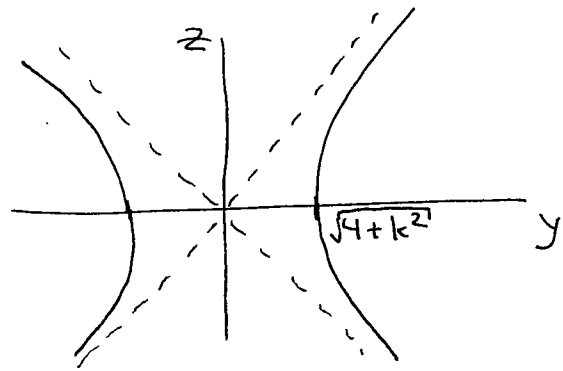
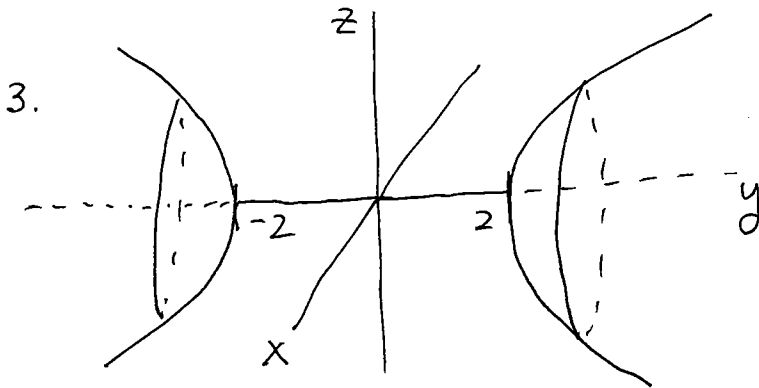
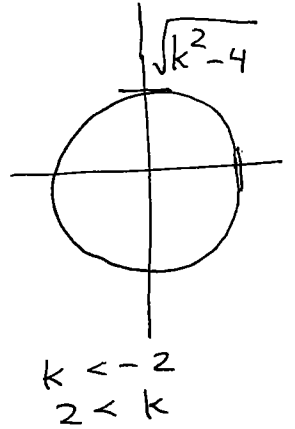
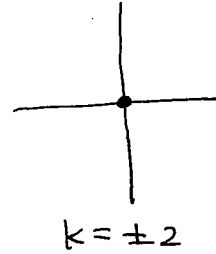
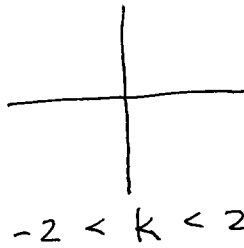


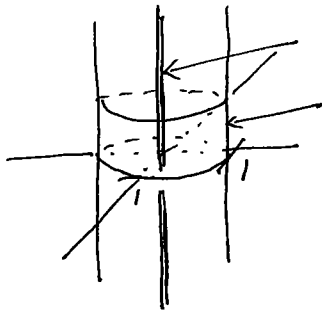
I.1.  $-k^2 + y^2 - z^2 = 4$   
 $y^2 - z^2 = 4 + k^2$   
 $\frac{y^2}{\sqrt{4+k^2}} - \frac{z^2}{\sqrt{4+k^2}} = 1$



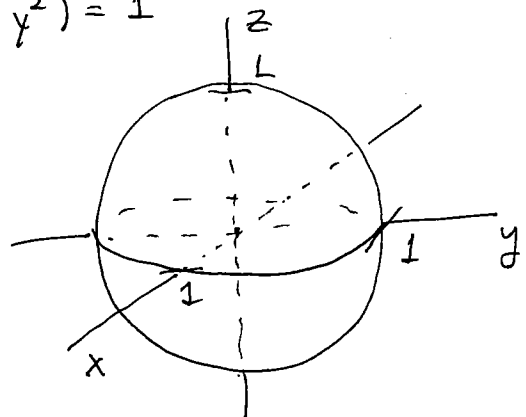
2.  $-x^2 + k^2 - z^2 = 4$   
 $x^2 + z^2 = k^2 - 4$



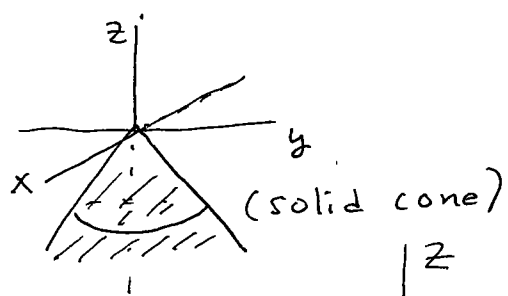
II 1.  $r^2 = r$   $r = 0$  (z-axis) or  $r = 1$  (cylinder)



2.  $z^2 + r^2 = 1$   $z^2 + (x^2 + y^2) = 1$   
 Sphere of radius 1

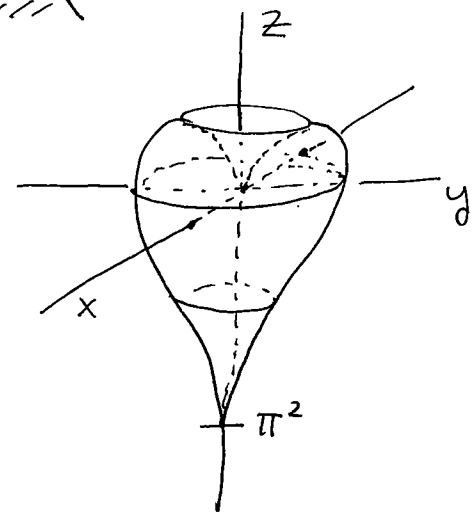
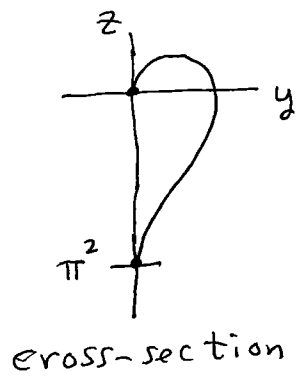


II.3.  $\frac{3\pi}{4} \leq \phi \leq \pi$



4.

$\rho = \phi^2$



III

