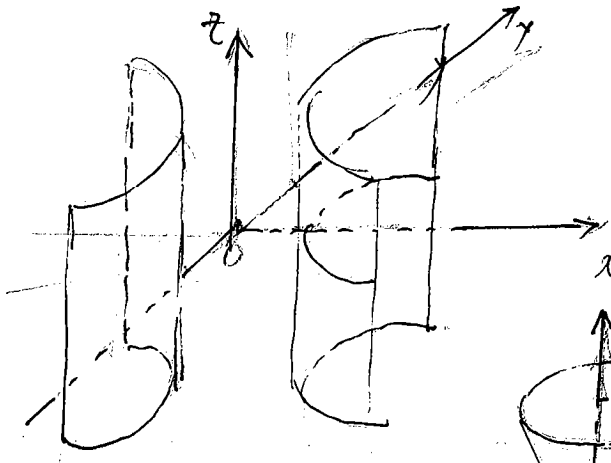
(4) $x^2-y^2=2x$

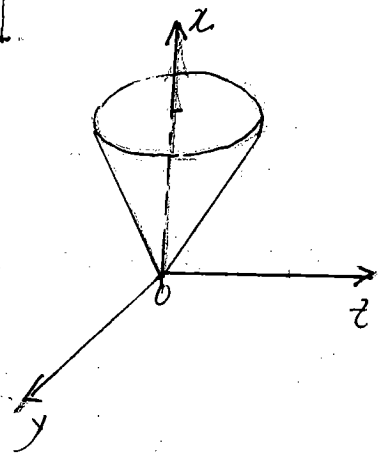
$x^2-2x+1-y^2=1$

$(x-1)^2-y^2=1$

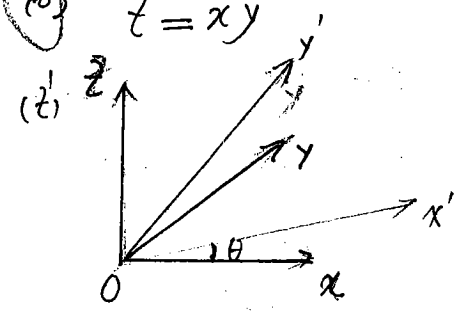
双曲柱面.



(5) $2y^2+z^2=x$ ，椭圆锥面.



(6) $z=xy$



旋转 $\begin{cases} x=x'\cos\theta-y'\sin\theta \\ y=x'\sin\theta+y'\cos\theta \\ z=z' \end{cases}$

$z=z'=(x'\cos\theta-y'\sin\theta)\cdot(x'\sin\theta+y'\cos\theta)$

$=x'^2\sin\theta\cdot\cos\theta+x'\cdot y'\cos^2\theta-x'\cdot y'\sin^2\theta-y'^2\cdot\sin\theta\cdot\cos\theta$

$=(x'^2-y'^2)\cdot\sin\theta\cdot\cos\theta+x'y'(\cos^2\theta-\sin^2\theta)$

$\cos^2\theta-\sin^2\theta=\cos2\theta\overset{令}{=}0$ ，$2\theta=\frac{\pi}{2}$ ，$\theta=\frac{\pi}{4}$.

$\sin\theta=\cos\theta=\frac{1}{\sqrt{2}}$ ，$\sin\theta\cdot\cos\theta=\frac{1}{2}$

$z'=\frac{1}{2}(x'^2-y'^2)$

$x'^2-y'^2=2z'$ 双曲抛物面.