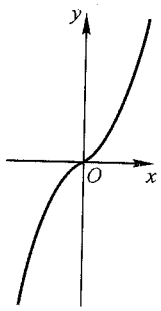
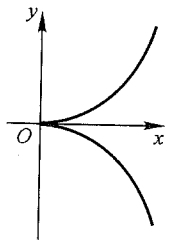
附录Ⅱ　几种常用的曲线

（1）三次抛物线



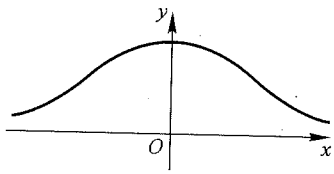
$y=ax^3$

（2）半立方抛物线



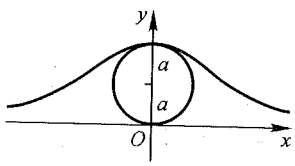
$y^2=ax^3$

（3）概率曲线



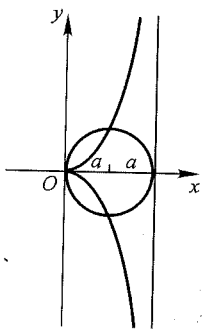
$y=e^{-x^2}$

（4）箕舌线



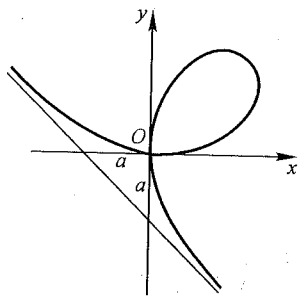
$y=\dfrac{8a^3}{x^2+4a^2}$

（5）蔓叶线



$y^2(2a-x)=x^3$

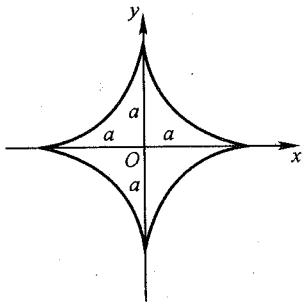
（6）笛卡儿叶形线



$x^3+y^3-3axy=0$

$x=\dfrac{3at}{1+t^3}, y=\dfrac{3at^2}{1+t^3}$

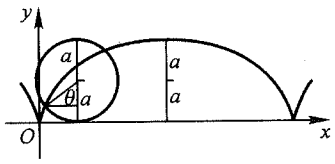
(7) 星形线(内摆线的一种)



$$x^{\frac{2}{3}} + y^{\frac{2}{3}} = a^{\frac{2}{3}}$$

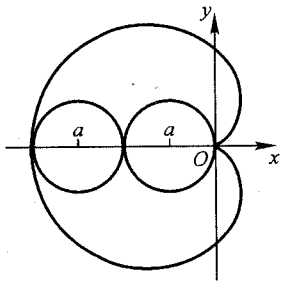
$$\begin{cases} x = a\cos^3\theta \\ y = a\sin^3\theta \end{cases}$$

(8) 摆线



$$\begin{cases} x = a(\theta - \sin\theta) \\ y = a(1 - \cos\theta) \end{cases}$$

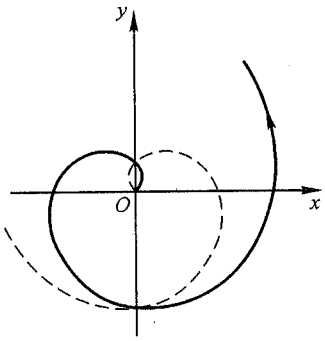
(9) 心形线(外摆线的一种)



$$x^2 + y^2 + ax = a\sqrt{x^2 + y^2}$$

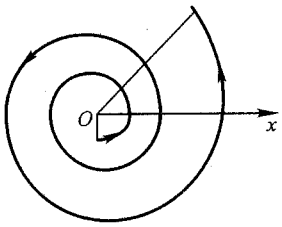
$$\rho = a(1 - \cos\theta)$$

(10) 阿基米德螺线



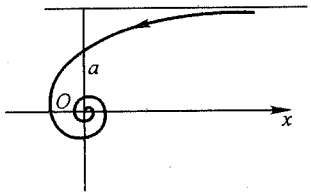
$$\rho = a\theta$$

(11) 对数螺线



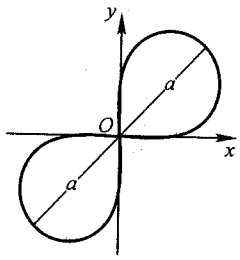
$$\rho = e^{a\theta}$$

(12) 双曲螺线



$$\rho\theta = a$$

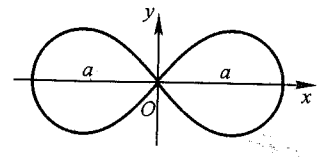
（13）伯努利双纽线



$(x^2+y^2)^2=2a^2xy$

$\rho^2=a^2\sin 2\theta$

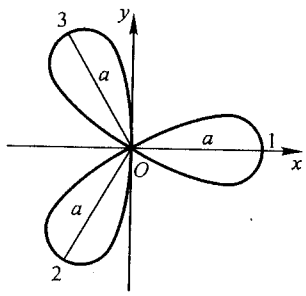
（14）伯努利双纽线



$(x^2+y^2)^2=a^2(x^2-y^2)$

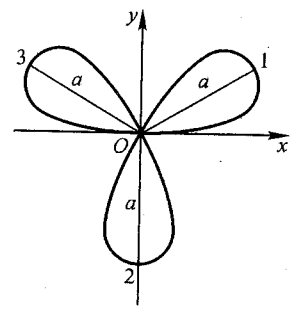
$\rho^2=a^2\cos 2\theta$

（15）三叶玫瑰线



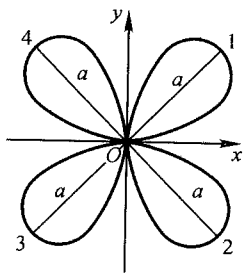
$\rho=a\cos 3\theta$

（16）三叶玫瑰线



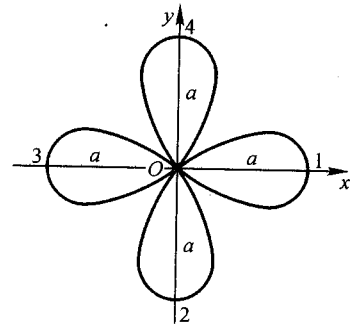
$\rho=a\sin 3\theta$

（17）四叶玫瑰线



$\rho=a\sin 2\theta$

（18）四叶玫瑰线



$\rho=a\cos 2\theta$