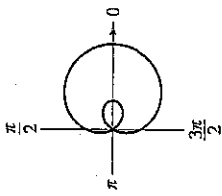


Limaçons

$r = a \pm b \cos \theta$

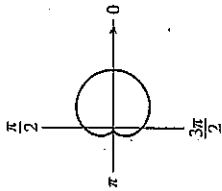
$r = a \pm b \sin \theta$

($a > 0, b > 0$)



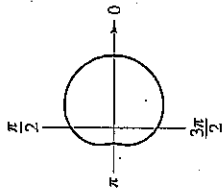
$\frac{a}{b} < 1$

Limaçon with inner loop



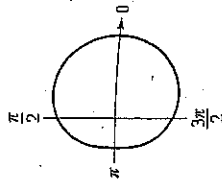
$\frac{a}{b} = 1$

Cardioid (heart-shaped)



$1 < \frac{a}{b} < 2$

Dimpled limaçon



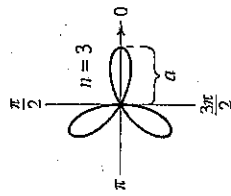
$\frac{a}{b} \geq 2$

Convex limaçon

Rose Curves

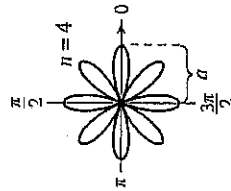
n petals if n is odd

$2n$ petals if n is even ($n \geq 2$)



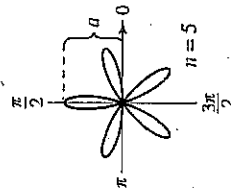
$r = a \cos n\theta$

Rose curve



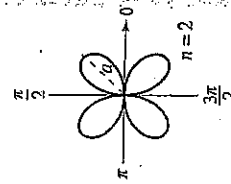
$r = a \cos n\theta$

Rose curve



$r = a \sin n\theta$

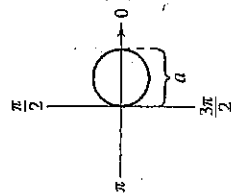
Rose curve



$r = a \sin n\theta$

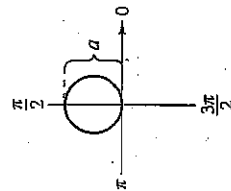
Rose curve

Circles and Lemniscates



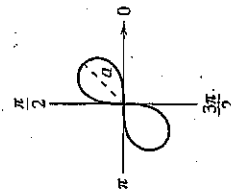
$r = a \cos \theta$

Circle



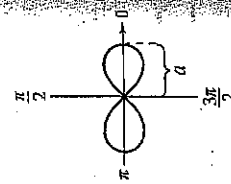
$r = a \sin \theta$

Circle



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

Lemniscate



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

Lemniscate

LARSEN, Hostetter, Edwards