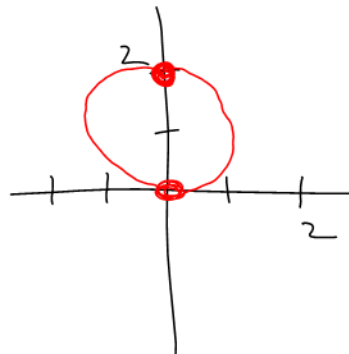


10.4 Cont'd

Ex: Sketch $r = 2\sin\theta$

Note: Curve is traced out over $0 \leq \theta < \pi$

θ	$r = 2\sin\theta$
0	0
$\frac{\pi}{2}$	2
π	0



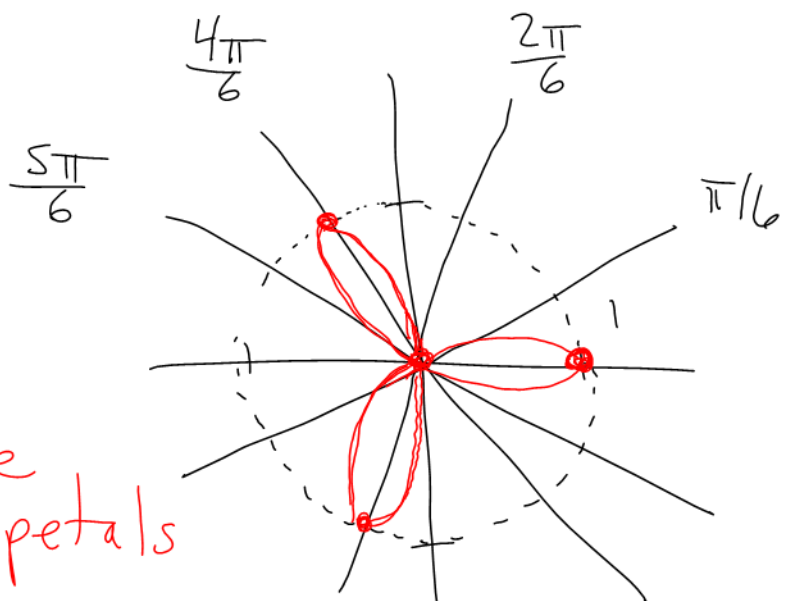
circle

Ex: Sketch $r = \cos 3\theta$

Note: Curve is traced out over $0 \leq \theta < \pi$

θ	$r = \cos 3\theta$
0	1
$\frac{\pi}{6}$	0
$\frac{2\pi}{6}$	-1
$\frac{3\pi}{6}$	0
$\frac{4\pi}{6}$	1

θ	$r = \cos 3\theta$
$\frac{5\pi}{6}$	0
$\frac{6\pi}{6}$	-1



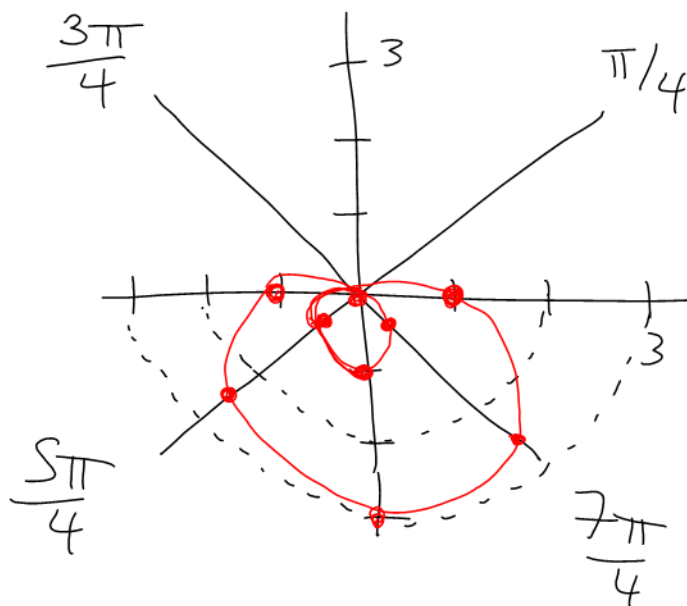
rose with 3 petals

Ex: Sketch $r = 1 - 2\sin\theta$

Note: Sketch in increments of $\frac{\pi}{4}$


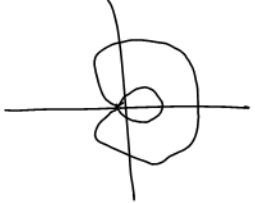



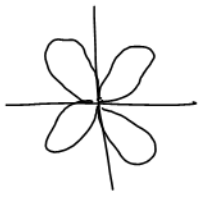
θ	$r = 1 - 2\sin\theta$
0	1
$\frac{\pi}{4}$	-0.4
$\frac{2\pi}{4}$	-1
$\frac{3\pi}{4}$	-0.4
$\frac{4\pi}{4}$	1

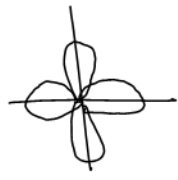
θ	$r = 1 - 2\sin\theta$
$\frac{5\pi}{4}$	2.4
$\frac{6\pi}{4}$	3
$\frac{7\pi}{4}$	2.4
$\frac{8\pi}{4}$	1



limaçon
(Pronounced LI-MA-SO)

Let a and b be real numbers.

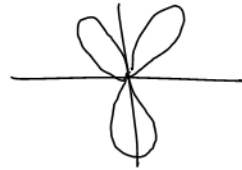
<u>Name</u>	<u>Graph</u>	<u>Equation</u>	<u>Traced Out Over</u>
Limaçon	 or rotated	$r = a + b \sin \theta$ or $r = a + b \cos \theta$	$[0, 2\pi)$
	 or rotated	Inner loop when $ a < b $	
Circle		$r = 1$	$[0, 2\pi)$
		$r = \sin \theta$	$[0, \pi)$
		$r = \cos \theta$	$[0, \pi)$
Rose		$r = \sin 2\theta$	$[0, 2\pi)$



$$r = \cos 2\theta \quad [0, 2\pi)$$



$$r = \cos 3\theta \quad [0, \pi)$$



$$r = \sin 3\theta \quad [0, \pi)$$