

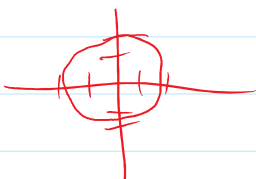
G.2 Notes (9.1/9.2 in bk): Polar Graphs

When the equation is $r = \text{integer}$, this is a circle

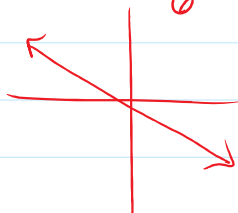
When the equation is $\theta = \text{an angle}$, this is a line

① Graph the following

a) $r = 2$



b) $\theta = \frac{5\pi}{6}$

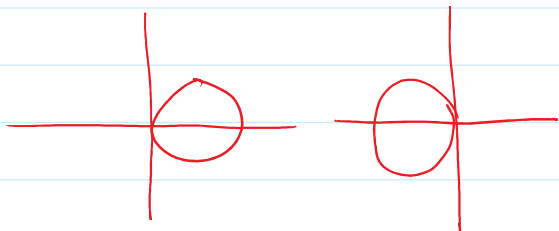


Circle: $r = \text{integer}$ (center @ origin)

$r = a \cos \theta$

$a > 0$

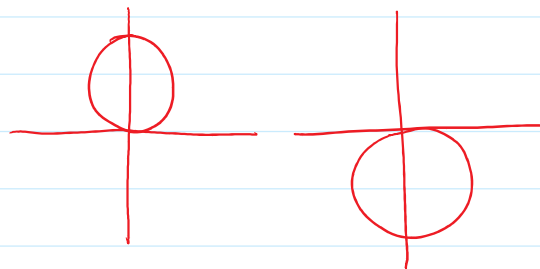
$a < 0$



$r = a \sin \theta$

$a > 0$

$a < 0$



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

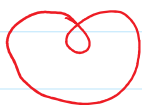
$r = a \pm b \sin \theta$

w/ inner loop

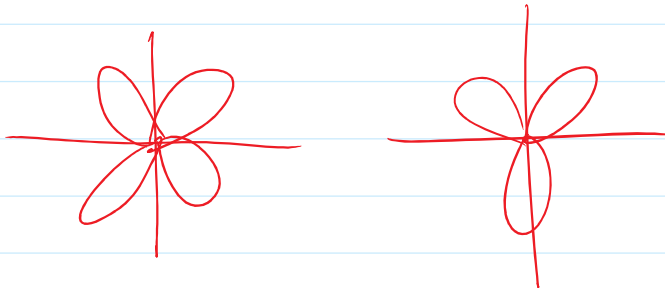
Cardioid

$a < b$

$a = b$



Roses: $r = a \cos n\theta$ $r = a \sin n\theta$ where $n \geq 2$



Lemniscates: $r^2 = a^2 \cos 2\theta$ $r^2 = a^2 \sin 2\theta$

Spiral of Archimedes: $r = a\theta + b$