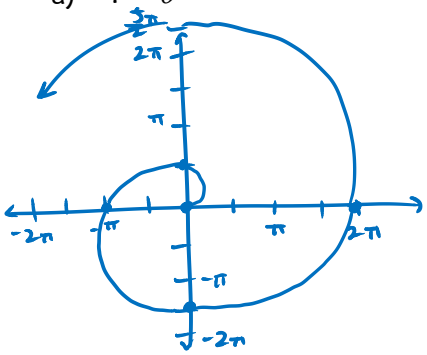
POLAR CURVES

OBJECTIVES: 1) Graph polar equations.

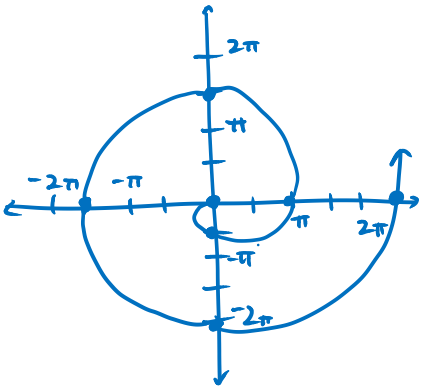
GRAPHING TECHNIQUES

1) Graph the following:

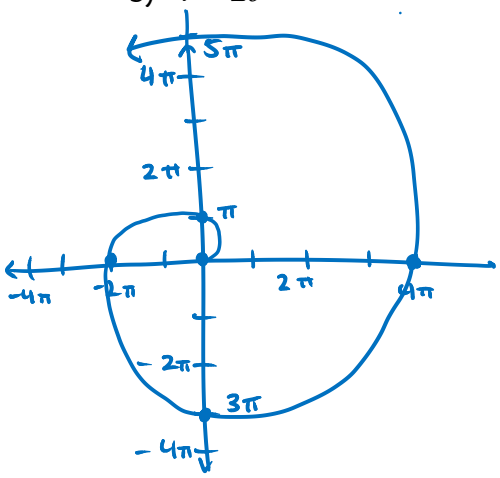
a) $r = \theta$



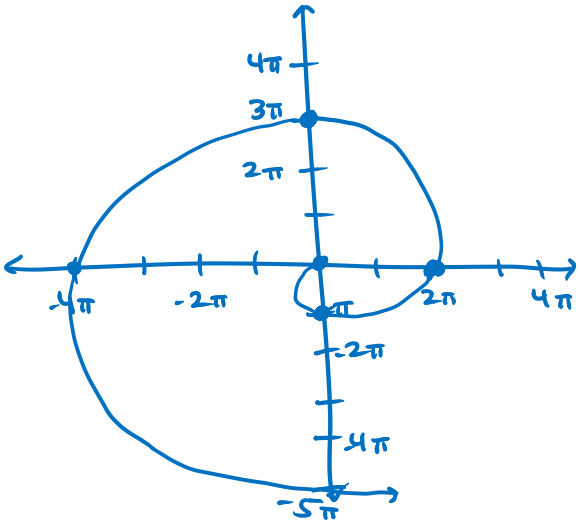
b) $r = -\theta$



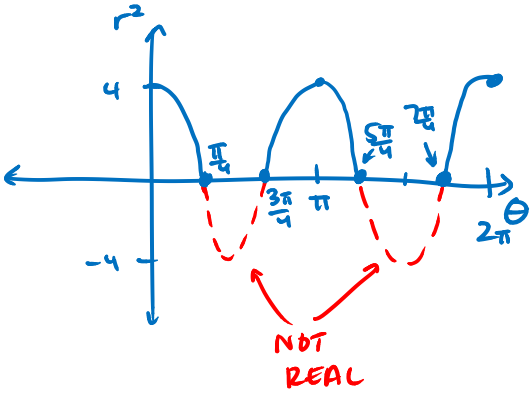
b) $r = 2\theta$

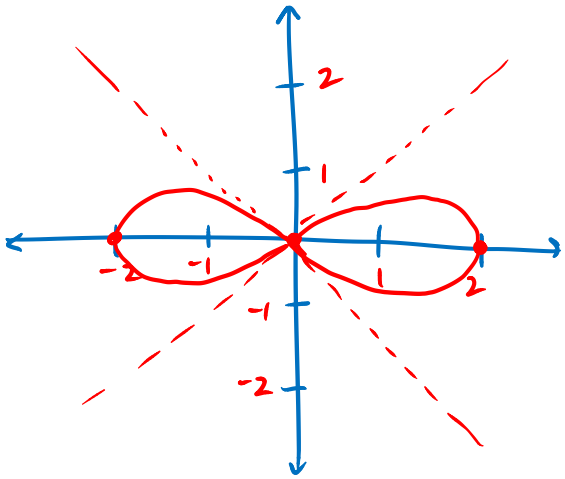


b) $r = -2\theta$

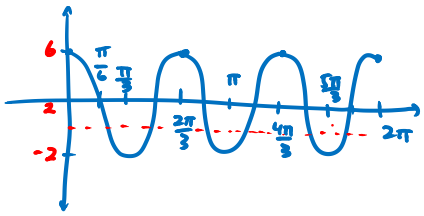


2) Graph $r^2 = 4\cos 2\theta$ as a rectangular function and a polar function.





3) Graph $r = 4\cos 3\theta + 2$ as a rectangular function and a polar function.



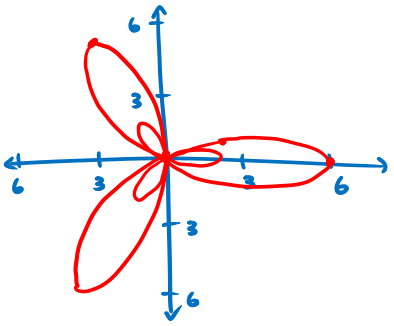
$0 \le 3\theta \le 2\pi$

$0 \le \theta \le \frac{2\pi}{3}$

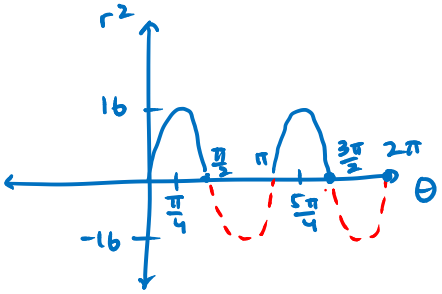
$4\cos 3\theta = 2$

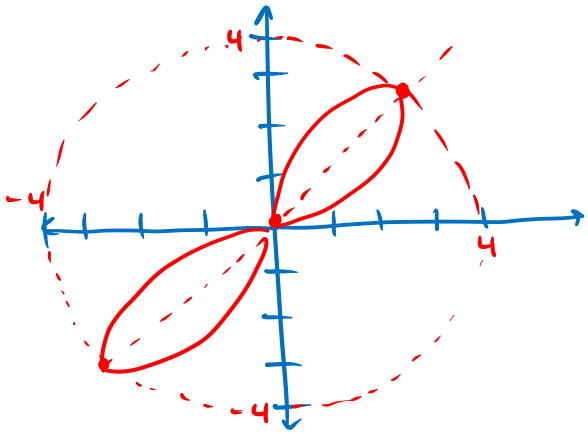
$\cos 3\theta = \frac{1}{2}$ $x = \frac{\pi}{6}, \frac{11\pi}{6}, 2$

$\theta = \frac{\pi}{18}, \frac{11\pi}{18}$

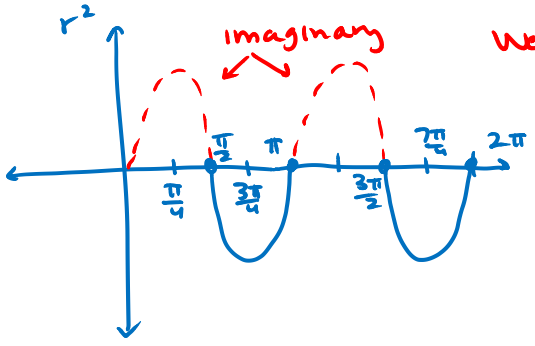


4) Graph $r^2 = 16\sin 2\theta$ as a rectangular function and a polar function.





5) Graph $r^2 = -16\sin 2\theta$ as a rectangular function and a polar function.



We want $-16\sin 2\theta$