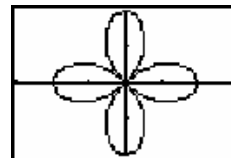
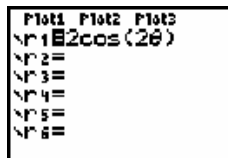
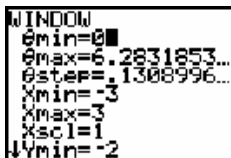
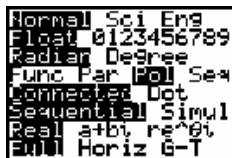


Exploring the Graphs of Polar Functions

Use the Graphing Calculator to explore the polar equations.

Note: for the WINDOW $Y_{\max} = 2$, $\theta_{\max} = 2\pi$, and $\theta_{\text{step}} = \pi/24$



Change the value of a in $y = \cos a\theta$ and also in $y = \sin a\theta$.

Count the number of loops for the following.

Value of a	Number of loops in $y = \cos a\theta$	Number of loops in $y = \sin a\theta$
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

Look carefully at the table and draw some conclusions about the relationship of the number of loops and the value of a in $y = a \cos \theta$ and $y = a \sin \theta$.

EXPLANATION: