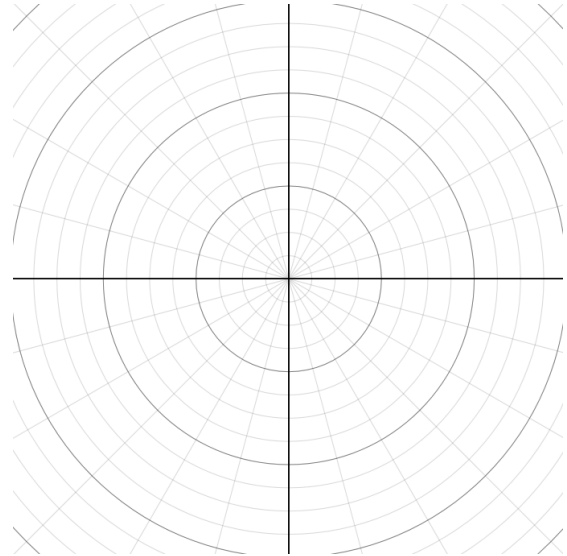


Name : _____

1. Consider the point $\left(-1, \frac{-\pi}{3}\right)$ in polar coordinates.

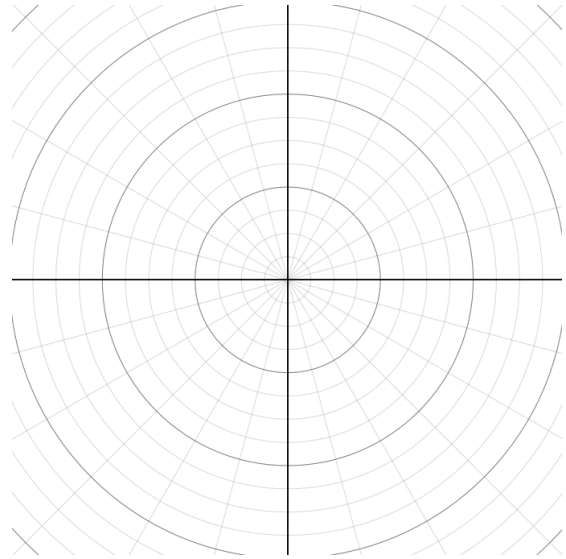
- a. Graph the point.
- b. Give two alternative representations for the point.
- c. Express the point in Cartesian coordinates.



2. Express the point with Cartesian coordinates $(-1, 0)$ in polar coordinates.

3. Convert the polar equation $r = \cot \theta \csc \theta$ to Cartesian equations.

4. Graph the polar equation $r = 3 \sin 2\theta$.



5. What happens if you replace the 2 with 1 in the above polar equation?