



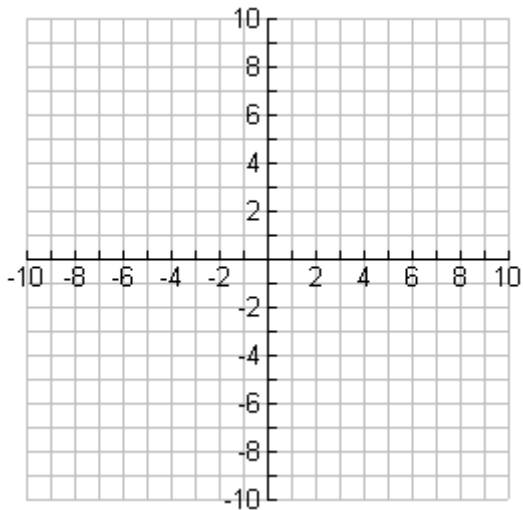
Problem 1 – Rectangular to Polar

1. Identify 3 basic equations useful in converting rectangular equations to polar form.

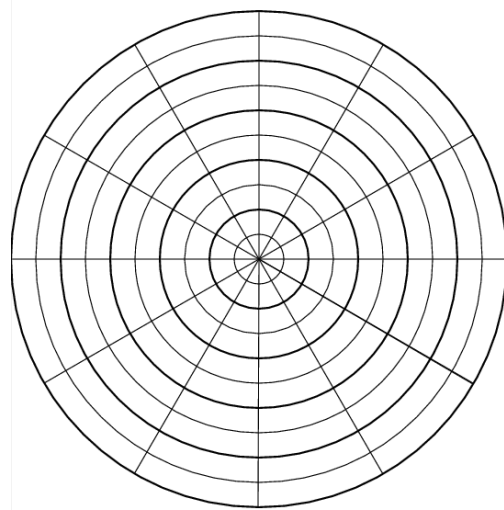
2. Convert $x^2 + (y - 4)^2 = 16$ to polar form using the equations identified above. Show your work in the space provided.

Make sketches of the initial rectangular equation and the polar equation obtained in the previous exercise.

Rectangular Graph



Polar Graph



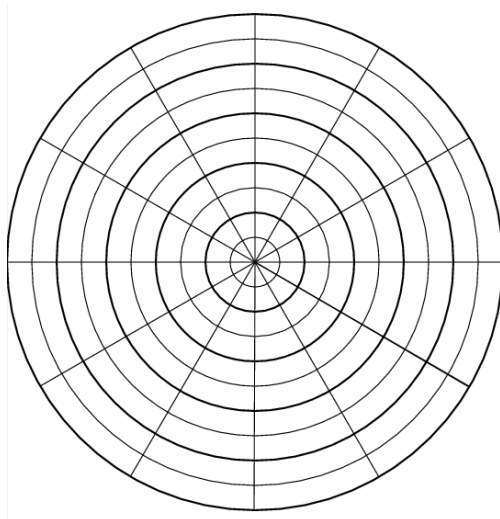


Problem 2 – Polar to Rectangular

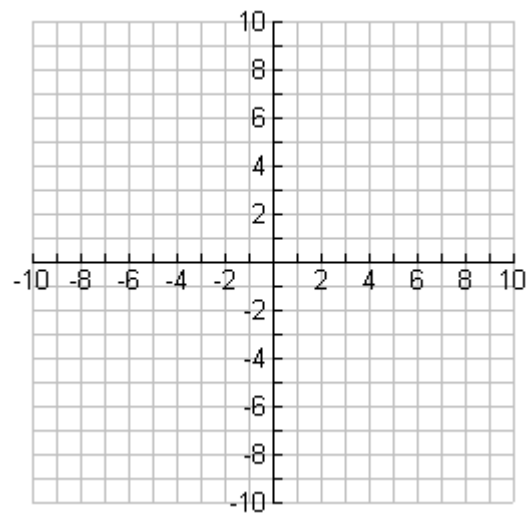
3. Convert the polar equation $2 = r \sin(\theta + \pi)$ to rectangular form. Show your work in the space provided.

Make sketches of the initial rectangular equation and the polar equation obtained in the previous exercise.

Polar Graph



Rectangular Graph





Additional Practice

4. Write the polar form of each of the following equations:

a. $x^2 + y^2 = 64$

b. $(x - 2)^2 + y^2 = 4$

c. $x = -5$

d. $x^2 - y^2 = 1$

5. Write the rectangular form of each of the following polar equations...

a. $r = 3$

b. $r = 3\sin\theta$

(hint: multiply each side by r first)

c. $6 = r \cdot \cos\left(\theta - \frac{\pi}{4}\right)$

d. $r = 3\sec(\theta + 60^\circ)$