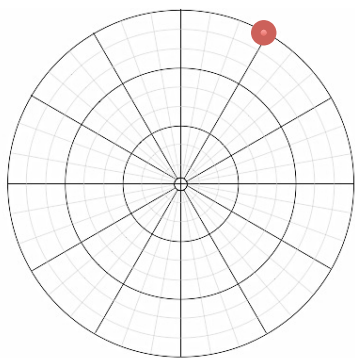


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(1) Graph the point $H\left(-1.5, \frac{7\pi}{6}\right)$.

(2) List four polar coordinates that represent the point on the grid below given $-2\pi \leq \theta \leq 2\pi$.



$$\left(3, \frac{\pi}{3}\right), \left(3, -\frac{5\pi}{3}\right), \left(-3, -\frac{2\pi}{3}\right), \left(-3, \frac{4\pi}{3}\right)$$

(3) Sketch the polar equation $\theta = -\frac{13\pi}{6}$

(4) Find the distance between the points with the polar coordinates $(3, 70^\circ)$ and $(5, 120^\circ)$.

3.84 units

(5) Sketch $r = \frac{1}{5}\theta$ using your graphing calculator. Identify the type of curve (circle, limacon, cardioid, lemniscate, rose, or spiral of Archimedes) it represents.

(6) Solve the system using algebra and trigonometry. Assume $0 \leq \theta < 2\pi$.

$$\begin{aligned} r &= \cos \theta \\ r &= 1 - \cos \theta \end{aligned}$$

$$\left(\frac{1}{2}, \frac{\pi}{3}\right), \left(\frac{1}{2}, \frac{5\pi}{3}\right)$$

(7) Find the polar coordinates of $(-2, -5)$. Use $0 \leq \theta < 2\pi$ and $r \geq 0$.

$$(5.39, 4.33)$$

(8) Find the rectangular coordinates of $(2.5, 250^\circ)$.

$$(-0.86, -2.35)$$

(9) Write $y = 2$ in polar form.

$$r = 2 \csc \theta$$

(10) Write $r = -\sec \theta$ in rectangular form.

$$x = -1$$

(11) Simplify i^{-6}

$$-1$$

(12) Simplify $(2 + 3i) + (-6 + i)$

$$-4 + 4i$$

(12) Simplify $(-2 + i)^2$

$$3 + 4i$$

(13) Simplify $\frac{i}{1+2i}$

$$\frac{2}{5} + \frac{1}{5}i$$

(14) Graph $-2 - i$, then find its absolute value.

$$\sqrt{5}$$

(15) Express $2 - 2i$ in polar form.

$$2\sqrt{2} \left(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4} \right)$$

(16) Rewrite in rectangular form.

$$4 \left(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3} \right)$$

$$2 + 2\sqrt{3}i$$