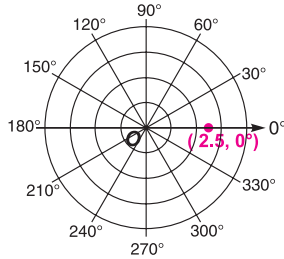


Practice

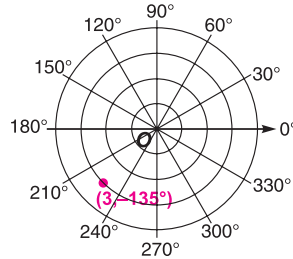
Polar Coordinates

Graph each point.

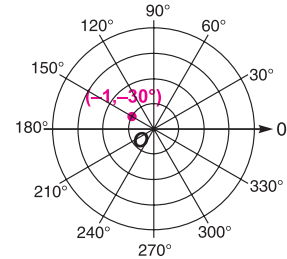
1. $(2.5, 0^\circ)$



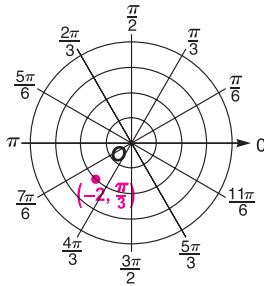
2. $(3, -135^\circ)$



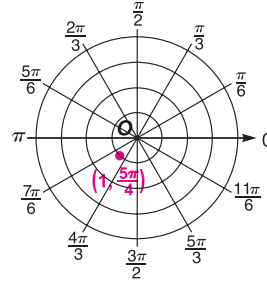
3. $(-1, -30^\circ)$



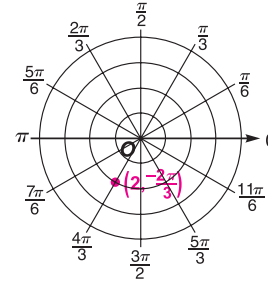
4. $(-2, \frac{\pi}{4})$



5. $(1, \frac{5\pi}{4})$

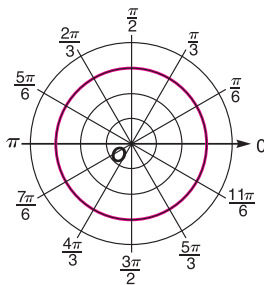


6. $(2, -\frac{2\pi}{3})$

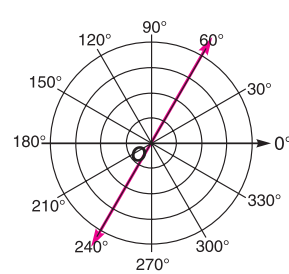


Graph each polar equation.

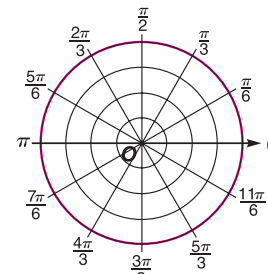
7. $r = 3$



8. $\theta = 60^\circ$



9. $r = 4$



Find the distance between the points with the given polar coordinates.

10. $P_1(6, 90^\circ)$ and $P_2(2, 130^\circ)$

4.65

11. $P_1(-4, 85^\circ)$ and $P_2(1, 105^\circ)$

4.95

Distance a

As you learned in Earth's surface in A line of longitude is called a **great** same circumference circumference of miles. (Since Earth is not precisely spherical however, that for

1. Find the circum

24,901.5 m

On a great circle the equator. Pittsburgh Earth's center to equator and Pittsburgh. (See the figure at

2. Find the length

69.2 miles

3. Charleston, South Carolina ($2^\circ 9' S$), both from Pittsburgh

530.3 miles

Because circles of equator, their radii shorter as they approach a degree of arc on a north or south of figure at the right located θ degrees radii of the equator parallel, $m\angle NEC$ gives $r = R \cos \theta$ Earth.

4. Find the radius 70° north of the

5. Find the length Exercise 4. **2**

6. Bangor, Maine ($44^\circ 50' N$). The west of Green

2662.0 miles