Name: _____

1) What is the distance between two points having polar coordinates of $(3,\frac{5\pi}{6})$ and $(4,\frac{\pi}{6})$?

A) $\sqrt{13}$ C) $2\sqrt{7}$

B) $\frac{1}{2}$ D) $\sqrt{37}$

2) Which one of the following points have polar coordinates that do *not* define the same point as the other three?

A) $(-2,\frac{\pi}{6})$ C) $(2,\frac{7\pi}{6})$

B) $(2,\frac{\pi}{6})$ D) $(2,-\frac{5\pi}{6})$

3) Which one of the following points would be located in the second quadrant of a coordinate grid?

A) $(2,-200°)$ C) $(2,-\frac{3\pi}{4})$

B) $(-3,120°)$ D) $(4,\frac{7\pi}{6})$

4) Which of the following polar coordinate pairs does *not* represent the point with rectangular coordinates (-2,-2)?

A) $(2\sqrt{2},-135°)$ C) $(-2\sqrt{2},135°)$

B) $(-2\sqrt{2},-315°)$ D) $(2\sqrt{2},225°)$

5) What is a polar conversion of the point with rectangular coordinates of $(1,-\sqrt{3})$?

A) $(2,-\frac{2\pi}{3})$ C) $(2,-\frac{\pi}{3})$

B) $(4,-\frac{\pi}{3})$ D) $(2,-\frac{\pi}{6})$

6) Which one of the following rectangular coordinates corresponds to the polar coordinates $(-4,\frac{3\pi}{4})$?

A) $(2\sqrt{2},2\sqrt{2})$ C) $(-2\sqrt{2},2\sqrt{2})$

B) $(2\sqrt{2},-2\sqrt{2})$ D) $(-2\sqrt{2},-2\sqrt{2})$

7) Which one of the following rectangular coordinates corresponds to the polar coordinates $(-1,\frac{5\pi}{4})$?

A) $(2\sqrt{2},2\sqrt{2})$ C) $(\frac{\sqrt{2}}{2},-\frac{\sqrt{2}}{2})$

B) $(-2\sqrt{2},2\sqrt{2})$ D) $(\frac{\sqrt{2}}{2},\frac{\sqrt{2}}{2})$

8) Which one of the following rectangular coordinates corresponds to the polar coordinates $(4,\frac{\pi}{2})$?

A) (0,4) C) (0,2)

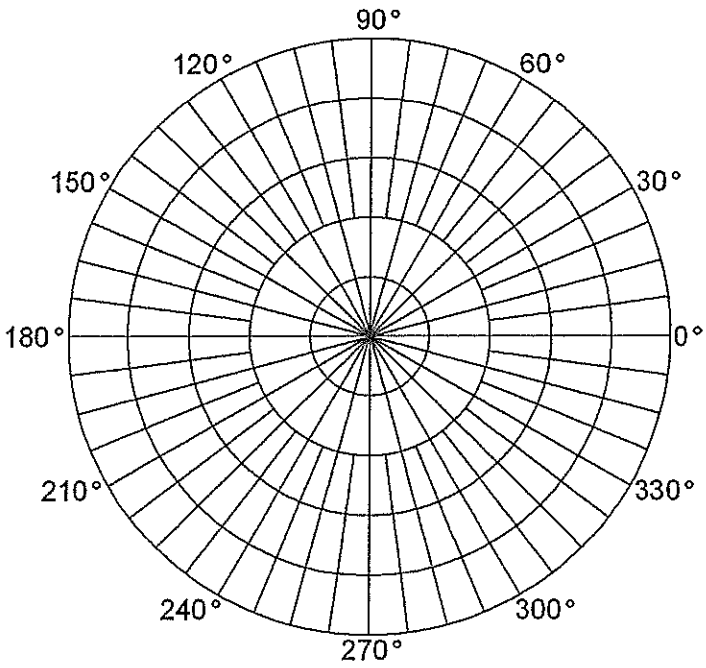
B) (2,4) D) (2,-4)

9) For the given point in a polar coordinate system, name the quadrant in which the point would appear when plotted.

$(-4,\frac{7\pi}{6})$

10) Explain how to plot the point $(-2,-\frac{\pi}{4})$ on a polar coordinate grid.

11) **(a)** Plot the point $R(-3,-120°)$ on the axes provided.



(b) Find *three* additional polar coordinates that define the same point plotted in *part (a)*.

Questions 12 and 13 refer to the following:

Convert the given rectangular coordinates to polar coordinates.

12) (4,0)

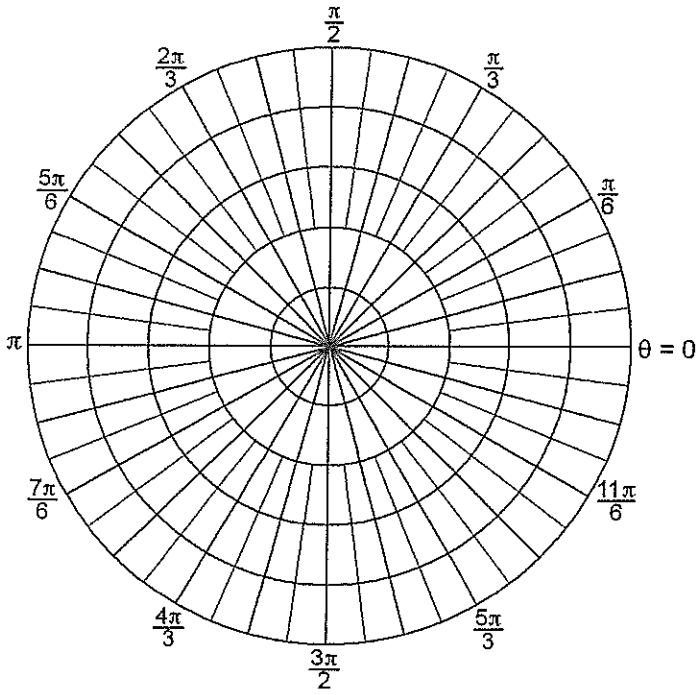
13) (0,-2)

14) Give the rectangular coordinates for the point $(2,\frac{3\pi}{4})$.

15) Convert the point $(3,-\frac{\pi}{2})$ to rectangular coordinates.

16) Convert the point $(-\sqrt{3},\frac{\pi}{3})$ to rectangular coordinates. [*Provide your answer in radical form.*]

17) (a) On the given polar axes, plot the point P having the polar coordinates $P(3,-\frac{\pi}{6})$.



(b) Name the quadrant that this point lies in.