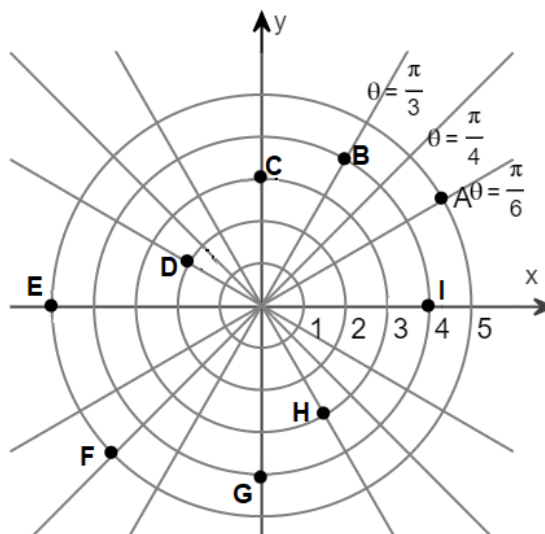
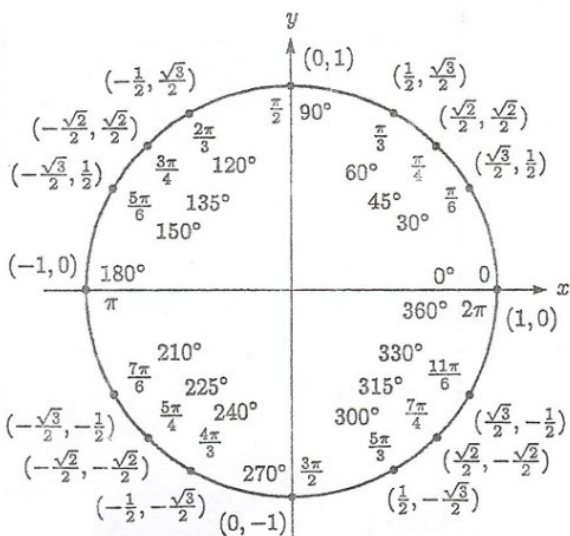


Polar \Leftrightarrow Rectangular



1. Write a pair of polar coordinates (r, θ) and a pair of rectangular coordinates (x, y) for the points A through I. **Give exact values. Report θ in radians please.** Utilize the unit circle for efficiency. No trig function should be in your answer. Only one polar coordinate (of your choice) need be reported.

A. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

B. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

C. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

D. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

E. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

F. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

G. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

H. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

I. $r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$ and $x = \underline{\hspace{1cm}}, y = \underline{\hspace{1cm}}$

Chill and do not use a calculator to answer these. Instead, stretch the unit circle to find (x, y)



Express in the polar coordinates. There are many correct answers. Only one is required. Give **exact** values. Report θ in **radians** please. Utilize the unit circle for efficiency. No trig function should be in your answer.

2. $x = 4, y = -4 \Leftrightarrow r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$

5. $x = -6\sqrt{3}, y = 3 \Leftrightarrow r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$

3. $x = -\sqrt{3}, y = 0 \Leftrightarrow r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$

6. $x = -7\sqrt{2}, y = -7\sqrt{2} \Leftrightarrow r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$

4. $x = 5, y = -10\sqrt{3} \Leftrightarrow r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$

7. $x = 0, y = -7\sqrt{2} \Leftrightarrow r = \underline{\hspace{1cm}}, \theta = \underline{\hspace{1cm}}$

8. Describe the properties of all point(s) which have the same coordinates in both the Cartesian and Polar Coordinate system.