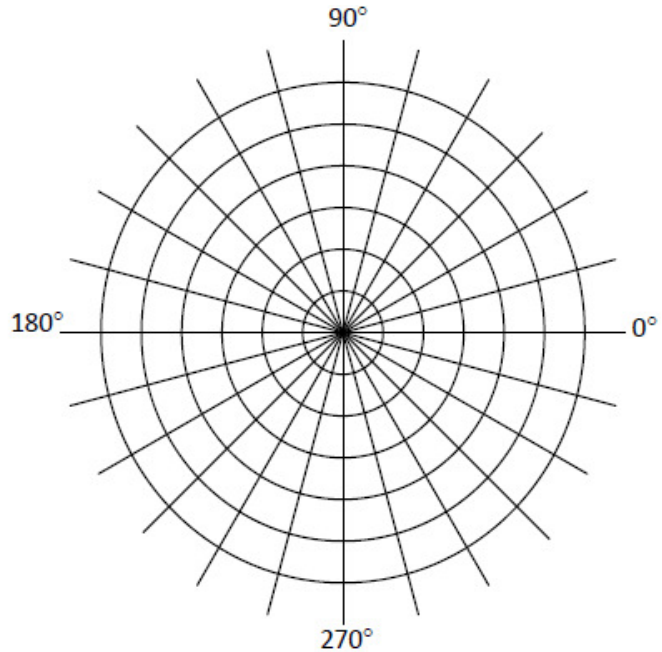


# Polar Coordinates

I. Graph and label each point.

1.  $A(3, 30^\circ)$
2.  $B(5, 240^\circ)$
3.  $C(1, 135^\circ)$
4.  $D(2, -60^\circ)$
5.  $E(-2, 45^\circ)$
6.  $F(-4, 300^\circ)$
7.  $G(-5, -45^\circ)$
8.  $H(-2, 0^\circ)$
9.  $I(0, -270^\circ)$



II. State three other pairs of polar coordinates for each point where  $-360^\circ < \theta < 360^\circ$ . Show work.

10. $(-2, 150^\circ)$	11. $(5, -60^\circ)$
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III. State three other pairs of polar coordinates for each point where  $-2\pi < \theta < 2\pi$ . Show work.

12. $\left(4, \frac{\pi}{5}\right)$	13. $\left(-3, \frac{2\pi}{3}\right)$
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IV. A point in polar coordinates is given. Convert the point to rectangular coordinates. Show work.

14. $\left(3, \frac{\pi}{2}\right)$	15. $\left(-1, \frac{5\pi}{4}\right)$
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16. $\left(2, \frac{7\pi}{6}\right)$	17. $(-2.5, 1.1)$ Use a calculator.
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V. A point in rectangular coordinates is given. Convert the point to polar coordinates. Show work.

18. $(-3, -3)$	19. $(-6, 0)$
20. $(4, -4\sqrt{3})$	21. $(-3, 4)$