

No calculators will be allowed and no partial credit will be given.

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1. Convert the polar point  $(4, -2\pi)$  to an equivalent polar point where  $r > 0$  and  $0 \leq \theta < 2\pi$ .
2. Convert the polar point  $(-4, 2\pi)$  to an equivalent polar point where  $r > 0$  and  $0 \leq \theta < 2\pi$ .
3. Find the Cartesian coordinates of the point whose polar coordinates are  $\left(-3, -\frac{\pi}{2}\right)$ .
4. Find the Cartesian coordinates of the point whose polar coordinates are  $\left(-3, -\frac{\pi}{6}\right)$ .
5. The Cartesian coordinates of the point P are  $(-3, 0)$ . Find the polar coordinates of P for which  $r > 0$  and  $0 \leq \theta < 2\pi$ .

1.  $(4, 0)$
2.  $(4, \pi)$
3.  $(0, 3)$
4.  $\left(-\frac{3\sqrt{3}}{2}, \frac{3}{2}\right)$
5.  $(3, \pi)$