

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

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

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

2.  $\left(3, \frac{4\pi}{3}\right)$

3.  $(3, 0)$

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

5.  $\left(2, \frac{\pi}{2}\right)$