

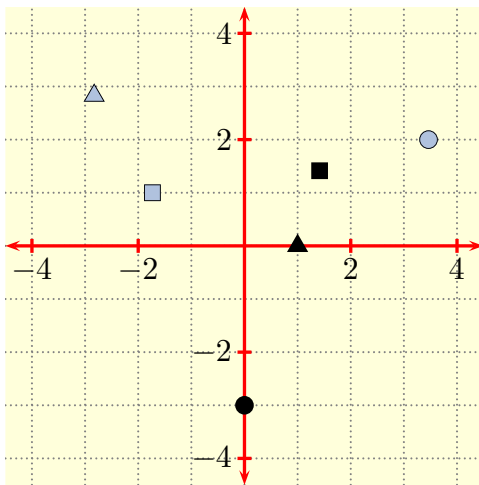
This print-out should have 8 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

001 10.0 points

Locate the points given in polar coordinates by

$$P\left(4, \frac{3}{4}\pi\right), \quad Q\left(-3, \frac{1}{2}\pi\right) \quad R\left(4, \frac{1}{6}\pi\right),$$

among



1. $P : \bullet \quad Q : \circ \quad R : \triangle$
2. $P : \bullet \quad Q : \triangle \quad R : \circ$
3. $P : \triangle \quad Q : \circ \quad R : \bullet$
4. $P : \circ \quad Q : \bullet \quad R : \triangle$
5. $P : \triangle \quad Q : \bullet \quad R : \circ$
6. $P : \circ \quad Q : \triangle \quad R : \bullet$

002 10.0 points

Which, if any, of

A. $(4, 7\pi/3),$

B. $(4, \pi/3),$

C. $(-4, 7\pi/6),$

are polar coordinates for the point given in Cartesian coordinates by $P(2, 2\sqrt{3})$?

1. A and C only
2. C only
3. B only
4. none of them
5. A only
6. B and C only
7. all of them
8. A and B only

003 10.0 points

Find the Cartesian coordinates, (a, b) , of the point given in polar coordinates by $P(2, \pi/3)$.

1. $(a, b) = (-1, \sqrt{3})$
2. $(a, b) = (2, 2\sqrt{3})$
3. $(a, b) = (\sqrt{3}, -1)$
4. $(a, b) = (1, -2)$
5. $(a, b) = (1, \sqrt{3})$
6. $(a, b) = (\sqrt{3}, 1)$
7. $(a, b) = (-2, \sqrt{3})$
8. $(a, b) = (2\sqrt{3}, 2)$

004 10.0 points

Find a polar equation for the curve given by the Cartesian equation

$$3y^2 = x.$$

1. $r = 3 \csc \theta \cot \theta$
2. $3r = \csc \theta \cot \theta$
3. $3r = \sec \theta \cot \theta$
4. $3r = \sec \theta \tan \theta$
5. $r = 3 \sec \theta \tan \theta$
6. $r = 3 \csc \theta \tan \theta$

005 10.0 points

Find a Cartesian equation for the curve given by the polar equation

$$r + 6 \cos \theta = 0.$$

1. $(x - 3)^2 + y^2 = 9$
2. $(x - 3)^2 + y^2 + 9 = 0$
3. $x^2 + (y + 3)^2 = 9$
4. $(x + 3)^2 + y^2 + 9 = 0$
5. $(x + 3)^2 + y^2 = 9$
6. $x^2 + (y - 3)^2 = 9$
7. $x^2 + (y - 3)^2 + 9 = 0$
8. $x^2 + (y + 3)^2 + 9 = 0$

006 10.0 points

Find a polar representation for the curve whose Cartesian equation is

$$(x + 1)^2 + y^2 = 1.$$

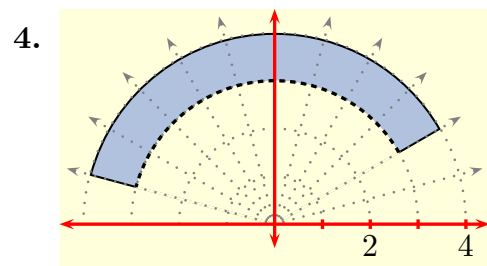
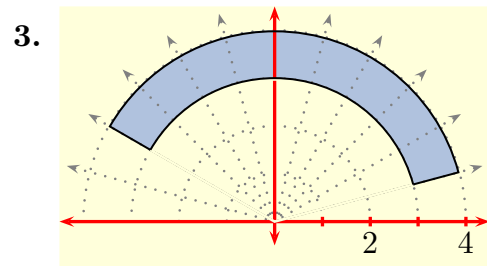
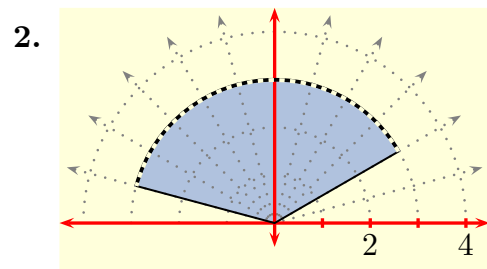
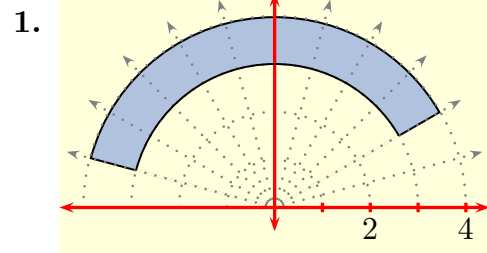
1. $r = \sin \theta$
2. $r + 2 \sin \theta = 0$
3. $r = \cos \theta$

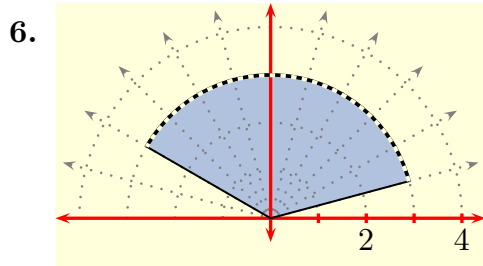
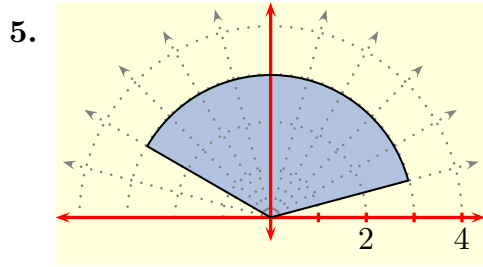
4. $r = 2 \cos \theta$
5. $r + 1 \sin \theta = 0$
6. $r + 2 \cos \theta = 0$
7. $r = 2 \sin \theta$
8. $r + 1 \cos \theta = 0$

007 10.0 points

Which one of the following shaded-regions in the plane consists of all points whose polar coordinates satisfy the inequalities

$$0 \leq r < 3, \quad \frac{1}{12}\pi \leq \theta \leq \frac{5}{6}\pi?$$





008 10.0 points

Which one of the following shaded regions consists only of points whose polar coordinates satisfy the condition

$$-\frac{\pi}{8} \leq \theta < \frac{3\pi}{4}?$$

