

1. Find the area of a sector of radius 3 and arc length 12.

2. Find the area of a sector of radius 7 and central angle  $\frac{\pi}{3}$ .

3. Find the linear distance traveled by a point on a rotating circle of radius 5 after 2 rotations.

4. Find the linear velocity of a point on a circle of radius 8 feet rotating at 12 RPM's.

5. Find the angular velocity of a point on a circle of radius 7 feet rotating at 15 RPM's.

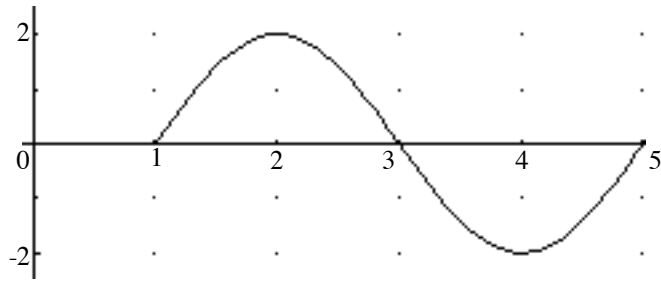
6.  $\sin \frac{7\pi}{6} =$

7. Find the period of  $y = 3 \sin(5x - 2)$

8. Find the arc length of a sector with radius 3 in and central angle 2.

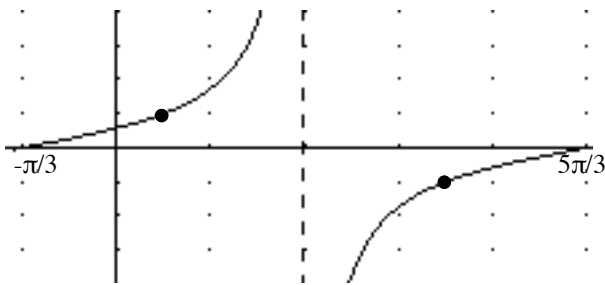
9. Find the period of  $y = 2 \tan(3x + 3)$

10. Show Work and Write the Equation of the Graph Below.



11. Show Work and Write the Equation of the Graph Below.

Horizontal Tick Mark are at  $\frac{\pi}{3}$  Unit Intervals. Vertical Tick Marks are at Unit Intervals.



12.  $\ln 2 - \ln 7 = \ln 2x - \ln(3x + 1)$  Solve for  $x$ .

13.  $10x^5 - 21x^4 - 55x^3 + 7x^2 + 45x + 14$  Factor Completely.

14.  $y = f(x)$  contains point  $(-2, 9)$ .  $y = -4f(x + 3) - 5$  contains what mapped point.