

1. On the Mac OS X

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3. Specific angle measurements in radians. Convert angles to degrees and find the degree value.

1.  $180^\circ \times \frac{2\pi}{360} = \frac{2\pi}{3}$       2.  $45^\circ \times \frac{2\pi}{360} = \frac{\pi}{4}$

3.  $72^\circ \times \frac{2\pi}{360} = \frac{2\pi}{5}$       4.  $48^\circ \times \frac{2\pi}{360} = \frac{2\pi}{15}$

4. Specific angle measurements in degrees. Convert angles to radians and find the degree value.

1.  $\frac{\pi}{2} = 90^\circ$       2.  $\frac{3\pi}{4} = 135^\circ$       3.  $\frac{\pi}{3} = 60^\circ$

4.  $\frac{2\pi}{3} = 120^\circ$       5.  $-\frac{\pi}{2} = -90^\circ$

5. Solve each problem.

1. Find the arc length of a sector with a radius  $r = 10$  in and central angle  $\theta = \frac{\pi}{3}$  radians.  
 $s = r\theta = 10 \times \frac{\pi}{3} = \frac{10\pi}{3} \approx 10.47$  in

2. Find the area of a sector with a diameter  $d = 10$  in and central angle  $\theta = 60^\circ$ .  
 $r = \frac{d}{2} = 5$  in       $A = \frac{1}{2} r^2 \theta = \frac{1}{2} (5)^2 \left(\frac{\pi}{3}\right) = \frac{25\pi}{6} \approx 13.09$  in<sup>2</sup>

3. Find the perimeter of a sector with a radius of 10 in and central angle of  $60^\circ$ .  
 $r = 10$  in       $A = \frac{1}{2} r^2 \theta = \frac{1}{2} (10)^2 \left(\frac{\pi}{3}\right) = \frac{50\pi}{3} \approx 52.36$  in<sup>2</sup>  
 $s = r\theta = 10 \times \frac{\pi}{3} = \frac{10\pi}{3} \approx 10.47$  in  
 $P = 2r + s = 20 + 10.47 = 30.47$  in

4. Find the coordinates of the five unit circle points corresponding to the radian number  $\frac{\pi}{2}$ .

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