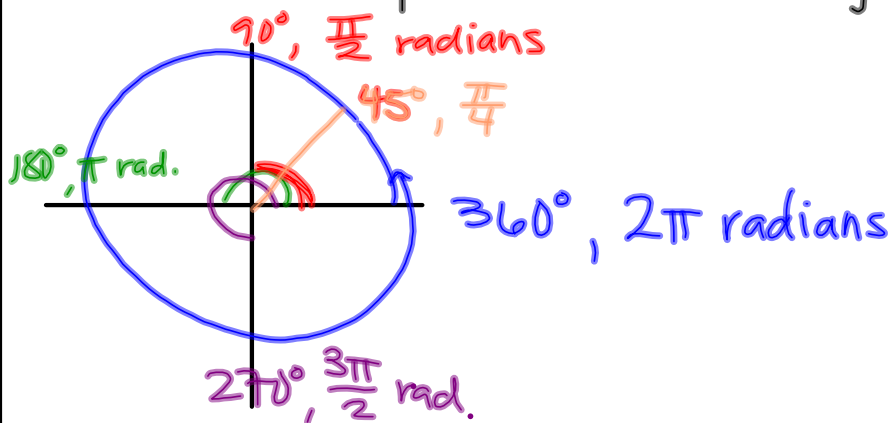


4.1 Angles & Their Measures

- Obj: 1. Convert between radians & degrees. *measure angles*
 2. Find arc length
 3. Solve problems involving angles.



Dec 17-9:03 AM

Convert from degrees to radians:

$$135^\circ \cdot \frac{\pi \text{ rad.}}{180^\circ} = \frac{135\pi}{180} = \frac{27\pi}{36} = \frac{3\pi}{4}$$

$$37^\circ \cdot \frac{\pi}{180^\circ} = \frac{37\pi}{180}$$

$$210^\circ \cdot \frac{\pi}{180^\circ} = \frac{210\pi}{180} = \frac{7\pi}{6}$$

Dec 17-9:13 AM

Convert from radians to degrees:

$$\frac{5\pi}{4} \text{ rad.} \cdot \frac{180^\circ}{\pi \text{ rad}} = \frac{5 \cdot 180^\circ}{4} = 225^\circ$$

$$\frac{11\pi}{12} \cdot \frac{180^\circ}{\pi} = \frac{11 \cdot 180^\circ}{12} = 165^\circ$$

$$\frac{14\pi}{31} \cdot \frac{180^\circ}{\pi} = \frac{14 \cdot 180^\circ}{31} = 81.29^\circ$$

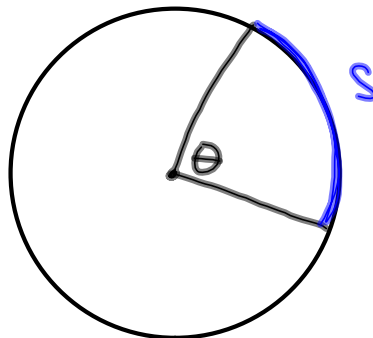
$$3 \cdot \frac{180^\circ}{\pi} = \frac{3 \cdot 180^\circ}{\pi} = 171.9^\circ$$

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Arc length:

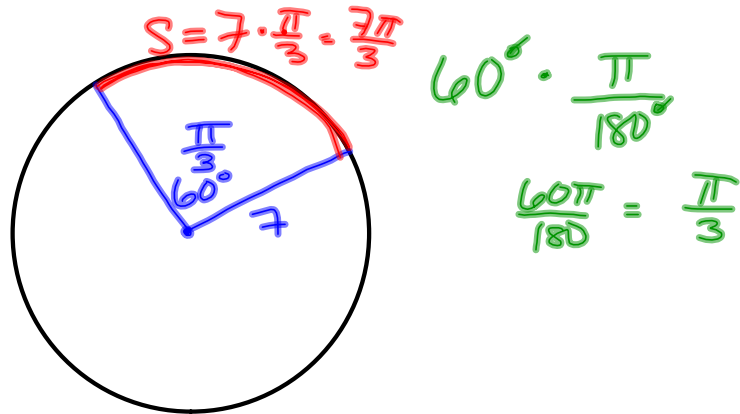
If θ is a central angle in a circle of radius r and if θ is measured in radians, then the length of s , the intercepted arc,

is: $s = r\theta$



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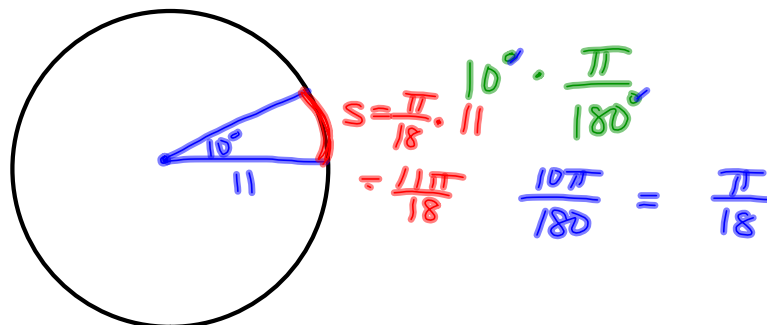
Find the perimeter of a 60° slice of a pizza with a 7 in rad.



$$P = 7 + 7 + \frac{7\pi}{3} \approx 21.33 \text{ in.}$$

Dec 17-9:27 AM

Find the perimeter of a 10° sector cut from a circular disc of rad. 11.



$$P = 11 + 11 + \frac{11\pi}{18} = 23.92 \text{ in}$$

Dec 17-9:30 AM