

① Degrees  $\Rightarrow$  radians

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

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② Radians  $\Rightarrow$  degrees

$$\text{EX } \frac{3\pi}{4} \cdot \frac{180^\circ}{\pi} = 135^\circ$$

arc length  $S = \theta \cdot r$  

$$\text{if } \theta = \frac{\pi}{3} \quad r = 2 \quad S = \frac{\pi}{3} \cdot 2 \Rightarrow \frac{2\pi}{3} \\ = 2.1 \text{ u}$$

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Area of a sector  $A = \frac{1}{2} \theta \cdot r^2$

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If angle given in Degrees  
MUST change to Radians

Angular Displacement

$$\theta = \text{Revolutions} \times 2\pi$$

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Angular velocity ( $\omega$ )

$$\omega = \frac{\theta}{t}$$

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Linear velocity =  $\omega \cdot r$

$$v = \omega \cdot r$$

# Transformation of Trig fns

$$f(x) = a \begin{bmatrix} \sin \\ \cos \end{bmatrix} (b(x-c)) + d$$

$$A = |a| \quad \text{if } a < 0; \text{ invert}$$

$$b = \frac{2\pi}{Pd} \quad ; \quad Pd = \frac{2\pi}{b}$$

$$C = -(\text{Phase Shift}) = \text{horizontal}$$

$$d = \text{Vertical Shift (midline)}$$

$$d = \frac{\text{Max} + \text{Min}}{2}$$

$$A = \frac{\text{Max} - \text{Min}}{2}$$

Pa = Distance from.  
Max → Max  
Min → Min