

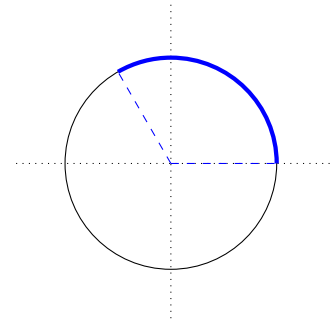
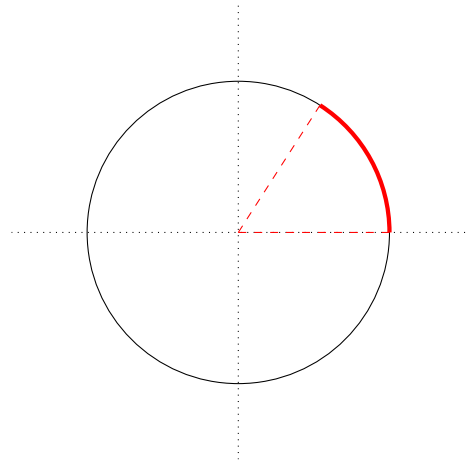
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# Angular Quantities

## Measuring Angles



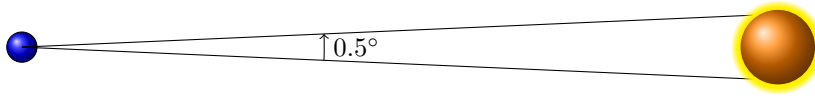
## Conversions

## Angular Kinematic Quantities

Concept	Linear/Translational Quantity	Angular/Rotational Quantity	“Bridge”
position			
displacement			
	units:	units:	
velocity			
	units:	units:	
acceleration			
	units:	units:	

## Practice

1. When you look at the Sun from the surface of the Earth, it subtends an angle of about  $0.5^\circ$  in the sky. The Earth is 150 million km away from the Sun. (a) Convert your angle to radians. (b) Estimate the diameter of the Sun.



2. A bicycle has wheels of diameter 68 cm. If the bicycle travels 92 km, how many rotations do the wheels make?
3. A wheel of radius 1.3 meters is accelerating at a rate of  $12 \text{ rad/s}^2$ . At the moment that the wheel is rotating at  $3.2 \text{ rad/s}$ ,
- (a) what is the magnitude of *tangential* acceleration at a point on the outside of the wheel?
  - (b) what is the magnitude of *radial* (centripetal) acceleration at a point on the outside of the wheel?
  - (c) what is the magnitude of the *total* acceleration at a point on the outside of the wheel?