8.2: Introduction

Circular motion may include the orbital motion of an object, or motion that outlines part of a circular path. According to Newton's 1st law of motion, an object will maintain straight line motion unless it is pushed or pulled by some force. Any force that causes an object to travel in a circular path is a centripetal force ("center-seeking" force). The push or pull forces the object to change direction and follow a circular path. The amount of force (F) required to keep a mass (m) traveling along a circular path depends the speed (v) with which the object travels around the circle and the radius (r) of the circle.

Centripetal Acceleration:

$$a = \frac{v^2}{r}$$

Centripetal Force:

$$\mathbf{F} = \mathbf{ma}$$

Contributors and Attributions

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