

Rotational Motion

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Objectives

Differentiate between rotations and revolutions.

Differentiate between rotational velocity and tangential velocity.

Calculate tangential velocity and state its metric unit.



Circular Motion

Axis - center of the circle

Rotate - axis is part of the object
object doesn't change position
(i.e. spinning)



Revolve - axis is NOT part of the object
(could be connected to the axis)
object does change position



Rotational Velocity

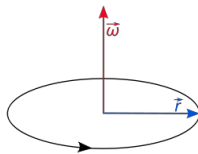
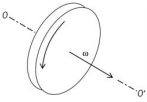
measures # of circles per time (spinning rate)

equal for all parts of a given circle

direction is clockwise or counter-clockwise

Unit: rev/sec or rev/min (rpm)

i.e. $\omega = 2 \text{ rev/sec}$



Tangential Velocity

measures actual distance per time along a circular path. (how fast objects are actually moving)

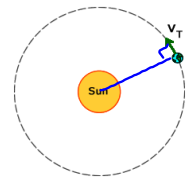
depends on the radius

direction is constantly changing (tangential)

right angle to the radius

$$v_t = \frac{2\pi r (\#rev)}{t}$$

Unit: m/s



Assignments . . .



- Begin Chapter 8 Homework # 1 - 6

