

THE CIROM Manual

**Manual for circular and
rotational motion learning
website**

THE CIROM TEAM

M. N. Eain, S. Hein, H. K. Aung

A Guide for Using Our Website

Page 1

The screenshot shows a dark-themed website. At the top right are navigation links: HOME, LEARNING, GAME, and MANUAL. Below them is a large blue wireframe sphere. In the center-left, the title 'ROTATIONAL MOTION' is displayed in large white capital letters. To its right is a text box containing Burmese text: 'ကြပ်နည်သည်။' (Circular motion). Below the title is a paragraph of English text: 'We will discuss over the concepts and equations for rotational motion under constant angular acceleration.' At the bottom left is a blue button labeled 'START LEARNING'. A white arrow points from a callout box at the bottom right towards this button.

Learning page သိသွားရန်
ကြပ်နည်ပပါ။

Page 2

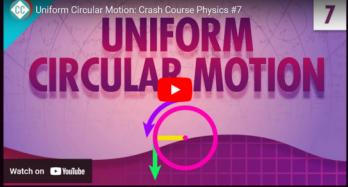
The screenshot shows a dark-themed website. At the top right are navigation links: HOME, LEARNING, GAME, and MANUAL. Below them is a large blue wireframe sphere. In the center-left, the title 'ROTATIONAL MOTION UNDER CONSTANT ANGULAR ACCELERATION' is displayed in large white capital letters. To its right is a text box containing Burmese text: 'မိမိနှစ်သက်ရာ သင့်ခန်းစာများ
ကို လေ့လာရန် သက်ဆင်ရာ
button များကို နှပ်ပါ။' (To use the buttons for the second edition of the book to learn how to rotate objects). On the far left, there is a vertical list of links: 'GO TO CIRCULAR MOTION', 'GO TO ROTATIONAL MOTION', and 'GO TO SUMMARY'. A curly brace groups the last two items.

A Guide for Using Our Website

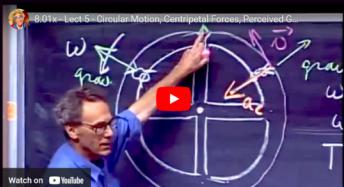
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CIRCULAR MOTION

Circular motion is described as a movement of an object while rotating along a circular path. Circular motion can be either uniform or non-uniform.



A DETAILED LECTURE ON CIRCULAR MOTION



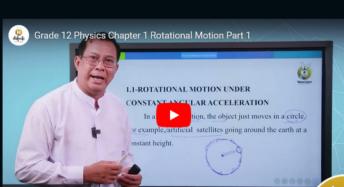
ROTATIONAL MOTION

Rotational motion can be defined as the motion of an object around a circular path, in a fixed orbit



IN BURMESE

Rotational motion can be defined as the motion of an object around a circular path, in a fixed orbit





သင်ခန်းစာများကို video များ
ဖြင့် ယခုဖော်ပြပါ စာမျက်နှာ
တွင် လေ့လာနှင့်ပါသည်။



A Guide for Using Our Website

Summary နှင့် သင်ခန်းစာပါ equations များကို
လည်း ဖော်ပြထားပါသည်။

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CIRCULAR MOTION

- An object moves around in a circle
- No axis
- Examples
 - Satellites revolving around the earth
 - Planets revolving around the sun
 - Motion of electrons around the nucleus in an atom

ROTATIONAL MOTION

- Three types of rotational motion
 - Motion about a fixed axis
 - Rotating fan blades
 - Rotation of hands on an analog clock
 - ZA WARU DO
 - A combination of rotational and translational motion
 - rolling of wheels on a car
 - Rotation about an axis of rotation
 - Earth orbiting around the sun while it also rotates about its own axis.

RIGID BODY

- Does not deform or change shape
- Distance between any particles with rigid body is constant

Scroll

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Linear Motion	Rotational Motion	
Position x	θ	Angular position
Velocity v	ω	Angular velocity
Acceleration a	α	Angular acceleration
Motion equations $x = \bar{v}t$	$\theta = \bar{\omega}t$	Motion equations
$v = v_0 + at$	$\omega = \omega_0 + \alpha t$	
$x = v_0 t + \frac{1}{2}at^2$	$\theta = \omega_0 t + \frac{1}{2}\alpha t^2$	
$v^2 = v_0^2 + 2ax$	$\omega^2 = \omega_0^2 + 2\alpha\theta$	
Mass (linear inertia) m	I	Moment of inertia
Newton's second law $F = ma$	$\tau = I\alpha$	Newton's second law
Momentum $p = mv$	$L = I\omega$	Angular momentum
Work Fd	$\tau\theta$	Work
Kinetic energy $\frac{1}{2}mv^2$	$\frac{1}{2}I\omega^2$	Kinetic energy
Power Fv	$\tau\omega$	Power

နေက် Manual page သိမာ့သွားပါ

HOME LEARNING GAME MANUAL

ROTATIONAL MOTION

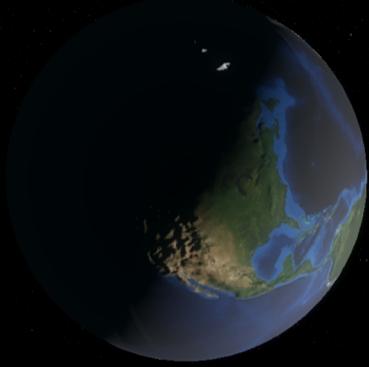
We will discuss over the concepts and equations for rotational motion under constant angular acceleration.

START LEARNING

ဝိမ်းသိမားရန် GAME ကိန္ဒပါ

A Guide for Our Visualization Game

1. All units are in SI Units
Radians for Distance
Seconds for Time



2. The lowest value of the slider is the real values of Earth's acceleration and velocity except the multiplier.

Multiplier	Velocity	Acceleration
1	7.27×10^{-5}	3.61×10^{-11}

Notice: Need to press Enter key to submit the value

You may see the earth is spinning backwards at some points.
That's the optical illusion called wagon wheel effect.
Try using even or odd numbers if those happens.
Using lower values is the best to visualize.

Sound Credits
 Oppenheimer (Original Motion Picture Soundtrack)
 (Phonogram) 2023 Back Lot Music, a Division of Universal Studios Music LLLP
 Released on: 2023-07-21

- လမ်းညွှန်များကို နံပါတ်တပ်ပေးထားပါသည်။
- အနီရောင်စာသားများကို ဂရုတစိုက်ဖတ်ရှုပေးပါ။
- ဂိမ်းအား angular velocity နှင့် acceleration ကိုပုံဖော်နိုင်စေရန် ရေးသားထားခြင်းဖြစ်ပါသည်။
- Wagon Wheel Effect (ခြောင်းပြန်လည်ခြင်း optical illusion) သည် speed အလွန်မြန်လျင်ဖြစ်ပါနိုင်သည်။ (acceleration အား အလွန်တင်လျင်ဖြစ်ပေါ်နိုင်သည်။)

The End of our Manual



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