

Lesson 3: Newton's Laws

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Homework Questions?

Lesson 3:
Newton's Laws

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Forces

Newton's Laws

Types of Forces

Homework 3

Force

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Definition

A **force** is

Systems

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Internal/External Forces

Types of Forces

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Some examples of forces

- **Gravity**
- **Tension**
- **Friction**

Newton's First Law

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Newton's First Law Mass

Newton's Second Law

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Newton's first law discuss objects moving at constant velocity, but they can also be accelerating...

Theorem (Newton's Second Law)

Test

$$\mathbf{F}_{\text{net}} = \sum \mathbf{F} = m\mathbf{a}$$

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Inertial Frames

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Airplane example

Newton's Third Law

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Gravitational Force

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Example

Free fall

Normal Force

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Example

Book, earth, 3rd Law Pairs

Friction

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Static, Kinetic Friction

Tension

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Example

Holding up a block by rope

Thrust

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Example

Rocket thrust

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Textbook Problems

- Test