

Reminders 9-19-07:

- Next Homework Due 9/23!!!
- Kinematics Conceptual Questions Due Wed. 9/19.
- Conceptual Quiz Today.
- Exam 1 Mon. 9/24, Sect. 3.1,3.2,4.1,4.2, & Ch 2.
- You must know exam policy.
- Phi Theta Kappa
- Save all files onto a USB Stick/Flash Drive.
- Obtain software from desktop of computers in lab.

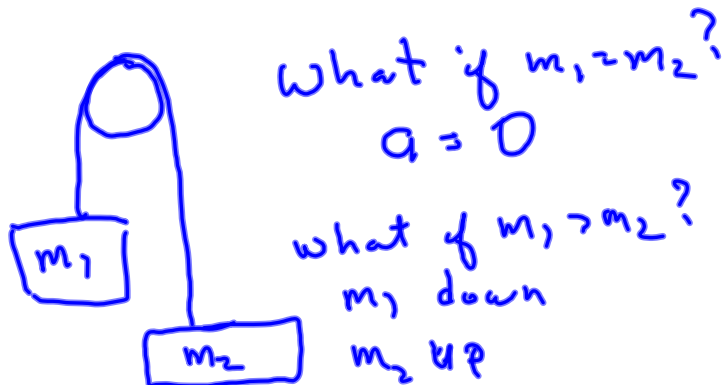
Objectives:


- Newton's Laws Revisited
- Examples, Examples, Examples

$$\sum \vec{F} = m\vec{a} = m \frac{\Delta \vec{v}}{\Delta t} = \text{net force}$$

Cause Effect

$$(\sum \vec{F}) \Delta t = m \Delta \vec{v}$$





Physics 2A Old Exams

- Dominic Calabrese -

- Home
- Syllabus
- Labs
- P2X Syllabus
- Old Exams
- Web Assien

Exams

- Exam 1**
- Exam 2
- Exam 3
- Exam 4
- Exam 4 Another Sample
- Final Exam

Note: The above sample exams were used in class periods that were 50 minutes in length.

- Exam 1 Crib Sheet
- Exam 2 Crib Sheet
- Exam 3 Crib Sheet
- Exam 4 Crib Sheet
- Final Exam Crib Sheet

Worksheets (to be assigned)

[Worksheet file](#)

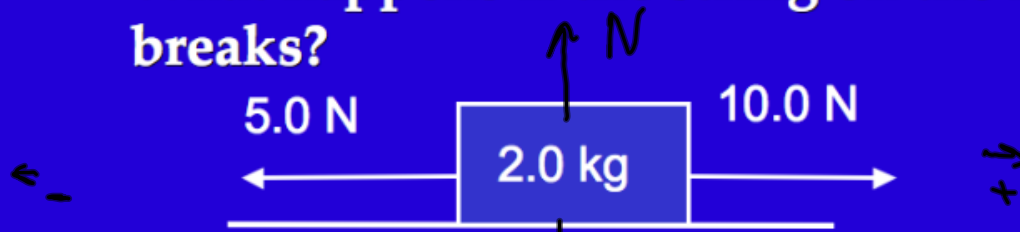
Conceptual Questions (to be assigned)

- Kinematics
- Force
- Energy & Momentum
- Circular Motion
- Fluids
- Torque
- Heat
- Thermodynamics

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| Resources | Phys Dept | Sierra

- Consider the system shown.
 - What is the net force acting on the object?
 - What is its acceleration?
 - How far does it travel and what is its velocity after 3.0 seconds ($v_i=0$)?
 - What happens if the string on the left breaks?



$$N - W = 0 = \sum F_y$$

$$\sum F_x = 10.0\text{ N} - 5.0\text{ N} = 5.0\text{ N} = ma$$

$$a = \frac{5.0\text{ N}}{2.0\text{ kg}} = 2.5 \frac{\text{N}}{\text{kg}} = 2.5 \frac{\text{kg m/s}^2}{\text{kg}}$$

$$\Delta X = \frac{1}{2} a t^2 = \frac{1}{2} (2.5 \frac{\text{m}}{\text{s}^2}) (3.0\text{ s})^2 = 11.2\text{ m}$$

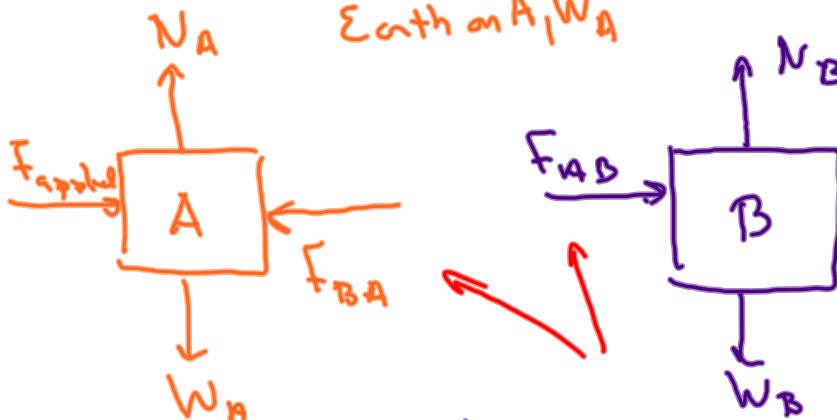
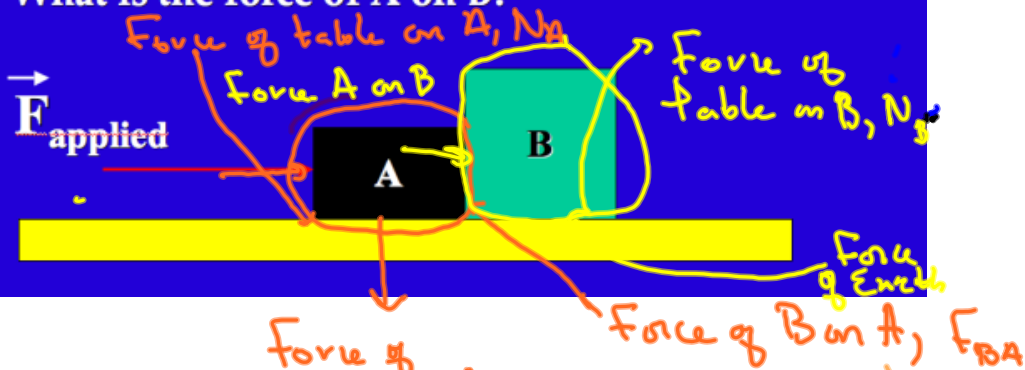
to right

$$\vec{v} = at = (2.5 \frac{\text{m}}{\text{s}^2}) (3.0\text{ s}) = 7.5 \frac{\text{m}}{\text{s}}$$

to right

Example.

Two blocks are resting on a frictionless table. Block A has mass of 1 kg and block B has mass 2 kg. A 3 N force is applied to block A as shown. What are the forces that are acting? What is the acceleration of the system? What's the displacement after 2 s? What is the force of A on B?



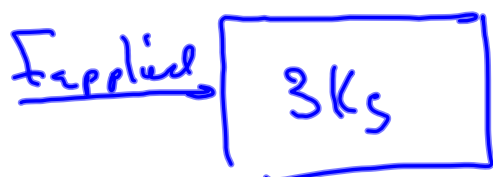
$$\sum F_{Ax} = F_{\text{APPLIED}} - F_{BA} = m_A a$$

$$\sum F_{Bx} = F_{AB} = m_B a$$

$$F_{\text{applied}} = (m_A + m_B) a$$

$$a = \frac{F_{\text{applied}}}{m_A + m_B} = \frac{3\text{N}}{3\text{kg}} = 1\text{m/s}^2$$

ds



$$F_{AB} = (2 \text{ kg}) (1 \text{ m/s}^2) = 2 \text{ N}$$

$$\Delta x = \frac{1}{2} (1 \text{ m/s}^2) (2)^2 = 2 \text{ m}$$