



JORGE CHAM © 2014



Marking Scheme

- 35% final exam
- 10% each: three tests (30% total)
- 15% weekly practicals
- 12% participation (class, online homework, reflections)
- 8% written homework
- 1% BONUS: pre/post-course surveys

Rubrics will be provided ahead of time. Please read them!

Test/Exam question types

- Short answer
- Long answer:
 - Traditional Problem
 - Modelling Problem
 - Data Analysis
- Mulligan: night of the test you can submit (for test credit) what you wish you'd added to the long answer question, so talk to each other after the test!

Resources for help

- Student Services (Koffler Centre)
- Health & Wellness (moving due to renovations?)
- Accessibility Services
- Registrar's Office
- Your instructors (your mileage may vary)

Things to do!

- Open your @mail.utoronto account
 - Otherwise you won't get announcements!
- Pick a practical section
 - 15% of your mark!
- Join some clubs, teams, etc.
 - Recognized Study Groups, Meet to Complete
- Homework to begin this weekend (I hope)

Summary

The goal of Chapter 1 has been to learn the fundamental concepts of motion.

General Strategy

Problem Solving

MODEL Make simplifying assumptions.

VISUALIZE Use:

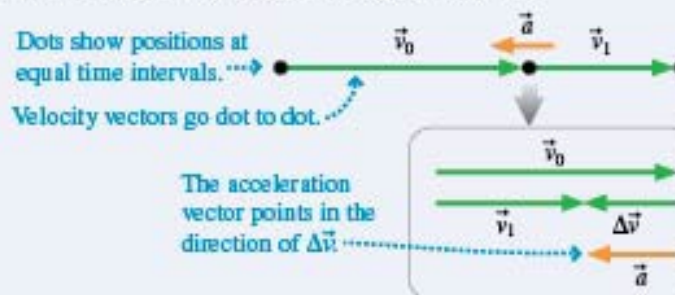
- Pictorial representation
- Graphical representation

SOLVE Use a mathematical representation to find numerical answers.

REVIEW Does the answer have the proper units and correct significant figures? Does it make sense?

Motion Diagrams

- Help visualize motion.
- Provide a tool for finding acceleration vectors.



► These are the *average* velocity and acceleration vectors.

Important Concepts

The particle model represents a moving object as if all its mass were concentrated at a single point.

Position locates an object with respect to a chosen coordinate system. Change in position is called **displacement**.

Velocity is the rate of change of the position vector \vec{r} .

Acceleration is the rate of change of the velocity vector \vec{v} .

An object has an acceleration if it

- Changes speed and/or
- Changes direction.

Pictorial Representation

1 Draw a motion diagram.

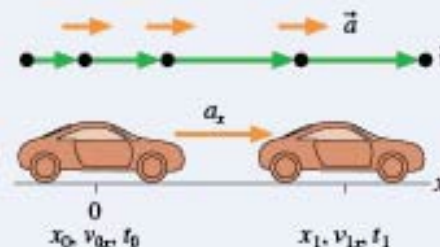
2 Establish coordinates.

3 Sketch the situation.

4 Define symbols.

5 List knowns.

6 Identify desired unknown.



Known

$$x_0 = v_{0x} = t_0 = 0$$

$$a_x = 2.0 \text{ m/s}^2 \quad t_1 = 2.0 \text{ s}$$

Find

$$x_1$$

You drop a ball from a height of 1.00 m. It bounces up to a height of 0.84 m after 0.89 s. What was the average acceleration of the ball when it was touching the ground?

