

# MA104 Lesson 28

## Parametric Equations II - Collisions and Intersections

Monday, 03 March, 2008

# Outline

- 1 Admin
- 2 Last Class
- 3 PARAMETRIC EQUATIONS II: INTERSECTION AND COLLISION
  - Course Guide
  - Why do we need Parametric Equations, collisions and intersections are even more important?
  - Do Problem Help
  - Neat Examples
- 4 Look Forward - MATHEMATICAL DIMENSIONS
  - Course Guide

# Birthday Cadet

Who's Birthday is It?

# Birthday Cadet

Who's Birthday is It?

- 1 This cadet is from a city in California!

# Birthday Cadet

Who's Birthday is It?



2

# Birthday Cadet

Who's Birthday is It?

**3** Yes it is Santa Clarita, California

# Birthday Cadet



1

# Birthday Cadet

- 2 This cadet is part of the Submission Grappling Club and the German Language Club

# Birthday Cadet



3

# Birthday Cadet

4 William Jung is 20 today 03 March 2008

# Admin

- 1 Project I is done and in AMS.
- 2 Two students in B hour need to take the Fundamental of Derivatives Test
- 3 Block II Homework/WPR II exercise
  - 1 Listen for your group and Squad Leader.
  - 2 You will re-do the problem and submit that to me on Thursday.
  - 3 You will brief the solution as a group on Thursday.
  - 4 Your Block II Homework will be the combined grade of the solution and the brief.

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- 4 Quiz? You will have 10 minutes

# Parametric Equations

Questions?

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# Objectives

- 1** Determine if the paths of two objects intersect given parametric equations modeling the paths of the objects in space.
- 2** Determine whether two objects collide given parametric equations modeling their motion in space.

# READ

## 1 Student Notes.

# THINK ABOUT

- 1 What does it mean for objects to intersect or collide in terms of modeling their motion with parametric equations?

# DO Problems

- 1 Do Problems 1 and 2 - found at the end of the Student Notes.

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# Where else do you see these type of applications?

## 1 Student Note Examples

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## Student Notes - Question 1 and 2

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# Cool Examples

**1**[▶ Tribute to Sean Taylor](#)[▶ Another look at Sean Taylor's hit](#)**2**

## Other Crazy examples

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# LESSON 30 - MATHEMATICAL DIMENSIONS

## 1 OBJECTIVES:

- 1 Understand the 3-D coordinate system and identify the coordinate planes within the system.
- 2 Determine the distance between points in 3 dimensional space.
- 3 Understand how to project a point onto a plane.

## 2 READ:

- 1 Stewart: Section 12.1, pages 765-768.

## 3 THINK ABOUT:

- 1 See if you can derive the distance formula on page 767 (look at Figure 9).

## 4 DO:

- 1 Section 12.1/ 3, 4, 6, 8, 10

# Questions?

Questions?