

Application Presentations

Objectives

- To deepen your understanding of the definite integral by explaining to your peers how the integral arises as the answer to a specific question in a field outside mathematics

Instructions

- Read and discuss the relevant section (or portion of a section) of the textbook.
- Choose one of the assigned presentation problems and solve it with your group.
 - A "C" indicates a challenge problem.
 - Problems are listed below.
- Write up your solution to your assigned presentation problem.
 - Choosing a challenge problem earns a bonus for the presentation (+1).
- Plan what you will say in your presentation and rehearse it together.
 - See below for details about the presentation format and content.
- Turn in your solution at the beginning of class on the day you present.
 - One copy per group.
 - The score for this problem will factor into your next problem set.

Presentation Problems

- Monday, Feb 21
 - Work: 6.4 #16 or 20(C)
 - Hydrostatic Force: 8.3 #12, 16(C)
- Tuesday, Feb 22
 - Center of Mass: 8.3 #28(C)
 - Consumer Surplus: 8.4 #4, 10(C)
 - Cardiac Output: 8.4 #24

Presentation Format

- 10-12 minutes in length
- Each group member should speak.
- Use the board (or presentation software) an outline of your presentation.
 - Make sure at least one of your group members can come early to write your outline on the board or get your slides ready on the computer.

Presentation Content

- Explain the physics, economics, or biology background.
 - Don't assume your classmates know any physics, economics, or biology.
- Explain why an integral is appropriate (perhaps even necessary) in this situation.
 - Make sure to discuss the appropriate Riemann sum and what it means.
- Explain the solution to your assigned problem.
 - Emphasize the set-up of the problem (the new material).
 - Don't spend too much time on the mechanics (e.g. algebra steps or integration techniques.)

Presentation Grading Criteria

- Clarity of delivery, depth of conceptual explanations, correctness of content.

Group Oral Presentations							  
Criteria	Ratings						Pts
Clarity of Delivery	3 pts Very clear Clear and understandable visual aid illustrates main points well. Individuals speak clearly, with appropriate inflection and emphasis. Transitions are smooth.				2.5 pts Clear	2 pts Somewhat Unclear.	3 pts
Depth of Conceptual Explanations	4 pts Very Strong Strong explanations of background material, appropriateness (even necessity) of an integral, derivation of specific integral formula, including discussion of Riemann sum and its meaning		3.5 pts Right Idea	3 pts Mixed or Vague Some strong explanations others weak; or substantive but vague throughout.	2.5 pts Basic Concepts explained only at surface level or in a confusing or contradictory way.	0 pts No Marks	4 pts
Correctness of Content	3 pts Complete and Correct		2.5 pts Roughly Correct		2 pts Good Progress	0 pts No Marks	3 pts
Bonus	1 pts Challenge Problem		0 pts Not Challenge Problem				1 pts
Total Points: 11							

Graded assignments for 6.4, 8.3, 8.4

- Group presentation (described above)
- Presentation problem (written up, one per group; score counts towards P4)
- Apps. Discussion (Wed Feb 23)
 - 6.4 #17, 8.3 #4, 26, 8.4 # 6, 23
 - Prepare these problems before class, as you usually do for the packet.
- WebAssign (part of WebAssign for P4)