

Maplets for Calculus

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Maplets for Calculus

What is a maplet?

- Maplet
 - ✦ Applet created in the Maple programming language
- Simple Examples
 - ✦ Hello World!
 - ✦ Integrator

Maplets for Calculus

What are Maplets for Calculus?

Collection of 69 maplets

... utilizing Maple's *symbolic, numeric, and graphic* capabilities

... to create *student-(and instructor-) friendly* environments

... for learning and teaching fundamental calculus
concepts, manipulations, theory, and applications.

Maplets for Calculus

➤ Problem Selection

- ✦ Algorithmic problems provide almost endless practice problems
- ✦ Ability to enter user-defined problems allows for use on traditional homework

Maplets for Calculus

- Problem Solution / Checking
 - ✦ Step-by-step approach closely follows standard methods and terminology found in textbooks
 - ✦ Hints are available
 - ✦ Solution is checked **symbolically** step-by-step
 - ✦ Correct solution can be displayed

Maplets for Calculus

- Distribution of topics:
 - 16 Pre-Calculus
 - 4 Limits
 - 22 Derivatives
 - 20 Integration
 - 2 Differential Equations
 - 3 Sequences / Series
 - 2 Curvilinear Coordinates
 - 69 Total

Maplets for Calculus

- Individual and Classroom Licenses
 - ✦ available through Maplesoft's MapleConnect program
http://www.maplesoft.com/products/thirdparty/maplets_calc/

- Web Access
 - ✦ USC/TAMU Students (secure)
Download: <http://calclab.math.tamu.edu/maple/maplets/>
MapleNet: <http://m4c.math.sc.edu/>

 - ✦ TOC/Videos (non-secure)
<http://www.math.sc.edu/calclab/M4C/>

Maplets for Calculus



What is WebALT?

Distance education using state-of-the-art technologies ...

- Multi-lingual (automatic translation)
- Internet-based, interactive/responsive, affordable
- Websites: <http://www.webalt.com> <http://www.webalt.net>
- Based at University of Helsinki; funded by European Community

Maplets for Calculus



Customized WebALT Maplets

- Solving Absolute Value Equations
- Fundamental Theorem of Calculus
- Limit Drill
- Derivative Drill
- Integration Drill

Maplets for Calculus

- MathFest (Knoxville, TN)
 - ✦ Saturday, August 12, 3:35 – 3:50
 - ✦ **Phil Yasskin & Doug Meade**

- Conference on Mathematics in the Digital Era (Aveiro, Portugal)
 - ✦ August 15 – 17, time TBA
 - ✦ **Phil Yasskin & Doug Meade**