Subject: Mathematics - Calculus Grade: Twelfth

Standard: #3 Differential Calculus

Key Concept: Students use the Mean Value Theorem.

Generalization: Students create a representation of the Mean Value Theorem.

Background:

Students have already studied derivatives of algebraic, trigonometric, and exponential functions, as well as sums, products, quotients, and composite and inverse functions.

This lesson should be used as a homework assignment after you first introduce the Mean Value Theorem. Each student will create a representation of their interpretation of the meaning and/or use of the Mean Value Theorem based on the information you have provided in your introduction. Students should be instructed to spend about half an hour to 45 minutes to complete the homework assignment. This lesson is meant to be used as a way to check on the teacher's effectiveness at introducing the Mean Value Theorem and to guide further explanations and homework selection.

This lesson is tiered in ***process*** according to ***learning style***.

Tier I: ***Logical-Mathematical Learners***

Students in this tier are to create a problem which illustrates the meaning and/or use of the Mean Value Theorem.

Tier II: ***Visual/Spatial Learners***

Students in this tier create a visual design which illustrates the meaning and/or use of the Mean Value Theorem.

Tier III: ***Musical/Rhythmic Learners***

Students in this tier create a melody or rap song which illustrates the meaning and/or use of the Mean Value Theorem.

Tier IV: ***Bodily/Kinesthetic Learners***

Students in this tier create a model which illustrates the meaning and/or use of the Mean Value Theorem.

Assessment:

This lesson is not intended to be graded but rather to be used as a way to see how students think about an advanced idea after an introduction. You can use it to see how well your introduction was received and whether you are on the right track. Have several students present their creations and use them as a basis to further discuss the Mean Value Theorem.