AP Calculus AB Project   Due: Thursday, May 23, 2013

Our Class is in Jeopardy!!!!

Create your own Jeopardy Review Game Questions.

You and a partner are going to practice and fine-tune your calculus skills and hopefully have some fun in the process. You will write 5 questions on 5 topics, each progressively more difficult than the one before it. The questions should be comparable to the level of difficulty and style found on the AP Exam and on Shay-Exams.

The questions in *each* category <u>must</u> present the ideas of calculus from four perspectives: Algebraic (given a formula), Numerical (given a table of values or one value), Graphical (given a graph) and Written (given a story/situation). ALSO: there is to be no more than TWO calculator questions in each category. There must be ONE multiple choice problem in each category and come up with good alternative answers. Label each question with either ANGW, whether Calculators are needed AND the chapter to which it corresponds.

Your questions MUST BE UNIQUE…please do NOT just copy problems from the book, internet, review books, released AP Exams etc. Any questions that are not unique will be considered copied and students will be plagiarizing. ANY copying, cheating, and/or plagiarizing will result in a FAILING grade on this project.

You are to include SOLUTIONS to your 25 problems Remember, solutions are worked out, step by step, not just answers. Try to not make the easy ones too easy, or the difficult one too impossible. Explain the likely mistakes that would lead students to pick the wrong multiple choice answers.

You are welcome to create additional problems, or make them extra creative and "real-life" to earn additional credit. Creative Category names are appreciated, as well! Double Jeopardy and Final Jeopardy is also welcomed!

The problems MUST be typed up OR *neatly* hand written and scanned. This project is to be ELECTRONIC, either DOC or DOCX. You also need to turn in a Jeopardy Powerpoint with your questions ready to go in either PPT or PPTX. The project is to be emailed to Mr. Shay. They are to be in his Inbox BEFORE NOON on Thursday, May 23, 2013.

We WILL play selected Jeopardy categories in class to help review for your final exam!

A *partial* list of topics is included on the next page.

- Limits
- Derivative Formulas
- Implicit Derivatives and Inverse Function Derivatives
- Continuity and Differentiability
- Slopes and Equations of Tangent Lines
- Related Rates
- Linear Approximation
- Mean Value Theorem and/or Rolle's Theorem
- Max/Min, Increasing/Decreasing
- Concavity, Inflection Points
- Optimization (Applied Max/Min)
- Physics applications (Particle Motion, speeding up/slowing down, total distance traveled, etc.)
- Integration/Anti-Differentiation
- Fundamental Theorems of Calculus
- Integral Approximation using Rectangles/Trapezoids
- U-Substitutions for Integration
- Average Value of a Function
- Area Between Two Curves
- Volumes by Rotation
- Volumes by Cross Section
- Solving Differential Equations
- Slope Fields