**AP CALCULUS SUMMER HOMEWORK**

I hope you are all enjoying your summer vacation.  To bring you a little more enjoyment, I am sending you the AP Calculus Summer Homework assignment.  This is a review of the calculus that we have learned so far.  As you click on each link, you will be opening a worksheet.  Please print out the worksheet and do the specific examples indicated.  Do NOT do all the questions (unless you are really bored over summer vacation.)  After each worksheet, you will find another worksheet with the answers.  Please check your answers and try to find your mistakes.  This assignment is due on the first day of classes.

NOTE:  There are approximately 100 examples to complete.  Space them out over the summer.  I do not suggest that you do them all right now, because you will forget it all by the end of the summer.  But, please don't leave it all until the day before school starts.

I can't wait to teach you next year IY"H. (To be honest, I CAN wait, because I am also looking forward to my summer break.  BUT, I am looking forward to teaching you again next year.

**Enjoy!**

**Mrs.  R. Rauch**


1) **Limits By Direct Evaluation (Do #1,3,5,7,9)**
   http://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20by%20Direct%20Evaluation.pdf

2) **Limits At Jump Discontinuities (Do #1,3,5,7,11)**
   http://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Jump%20Discontinuities%20and%20Kinks.pdf'

3) **Limits At Removable Discontinuities (Do #1,3,5,7,9,11,13)**
   http://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Removable%20Discontinuities.pdf

4) **Limits  At Essential Discontinuities (Do #1,3,5,7,9)**
   http://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Essential%20Discontinuities.pdf

5) **Limits At Infinity (Do #1,3,5,7,9)**
   http://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Infinity.pdf

6) **Continuity (Do #1,3,5,7,9,11,13)**
   http://cdn.kutasoftware.com/Worksheets/Calc/02%20-%20Continuity.pdf

7) **Definition of the Derivative (Do #1,3,5)**
   **Be sure to use the definition of the derivative and NOT the rules to solve.**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Definition%20of%20the%20Derivative.pdf

8) **Power, Constant and Sum Rules (Do #1,3,5,7,9,11,13,15)**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Power%20Constant%20and%20Sum%20Rules.pdf

9) **Higher Order Derivatives (Do #1,3,5,7,9)**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Higher%20Order%20Derivatives.pdf

10) **Product Rule (Do #1,3,5,7,9)**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Product%20Rule.pdf

11) **Quotient Rule (Do #1,3,5,7,9)**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Quotient%20Rule.pdf

12) **Chain Rule (Do #1,3,5,7,9,11)**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Chain%20Rule.pdf

13) **Differentiation Rules With Tables (Do #1,2,3,4,5)**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Differentiation%20Rules%20with%20Tables.pdf

14) **Chain Rule With Trig (Do #1,3,5,7)**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Chain%20Rule%20with%20Trig.pdf

15) **Implicit Differentiation (Do #1,3,5,7,9,13)**
   http://cdn.kutasoftware.com/Worksheets/Calc/03%20-%20Implicit%20Differentiation.pdf

16) **Derivative At A Value (Do #1,3,5,9)**
   http://cdn.kutasoftware.com/Worksheets/Calc/04%20-%20Derivative%20at%20a%20Value.pdf

17) **Slope At A Value (Do #1,3,5,7)**
   http://cdn.kutasoftware.com/Worksheets/Calc/04%20-%20Slope%20at%20a%20Value.pdf

18) **Tangent Lines (Do #1,3,5)**
   http://cdn.kutasoftware.com/Worksheets/Calc/04%20-%20Slope%20at%20a%20Value.pdf

19) **Horizontal Lines (Do #1,3,5,7,9)**
   http://cdn.kutasoftware.com/Worksheets/Calc/04%20-%20Horizontal%20Tangents.pdf

**20) Normal Lines (Do #1,3,5)**

**NOTE:  A normal line is a line that is perpendicular to a tangent line.  Remember from geometry that if two lines are perpendicular, then their slopes are opposite reciprocals. Therefore, if the slope of the tangent line is 1/3, then the slope of the normal line is -3.**

http://cdn.kutasoftware.com/Worksheets/Calc/04%20-%20Normal%20Lines.pdf