AP CALCULUS AB "SUMMER ASSIGNMENT" – 2021

While there is no formal written summer assignment for AP Calculus AB, you are expected to **KNOW** and be able to **APPLY** many of the concepts you learned in previous math courses especially Pre-Calculus.

1) **UNIT CIRCLE** - It will not just be filling in a unit circle! You will need to locate angles on the unit circle, find co-terminal angles and reference angles, and find trig values such as

$\cot\left(\frac{41\pi}{6}\right) =$??   (The correct answer is $-\sqrt{3}$)

You should be able to do all of these things in degrees and radians and **WITHOUT** a calculator!! You should also be able to do them quickly and accurately. A trig value quiz would be something like 5 of these problems in 8 minutes. You should PRACTICE, PRACTICE, PRACTICE!!

Here is a sample Unit Circle Quiz. You should be able to work these 5 problems correctly in 8 minutes or less.

Unit Circle Quiz
$\tan\left(\frac{-47\pi}{4}\right) =$
$\sec\left(\frac{18\pi}{3}\right) =$
$\sin\left(\frac{-17\pi}{2}\right) =$
$\cot\left(\frac{41\pi}{6}\right) =$
$\csc\left(\frac{40\pi}{4}\right) =$

2) **TRIG IDS** - You must also know the following sets of trig identities. Be sure that you can recognize ALL versions of ALL of the IDs (you should be able to manipulate the terms from side to side).

1) Reciprocal (6)
2) Quotient (2)
3) Pythagorean (3)
4) Even/Odd (3)
5) Sum and Difference (3)
6) Double and Half (8)

3) **Parent graphs**: constant, linear, quadratic, cubic, square root, rational, absolute value, ln x, e^x, a^x, ALL six original trig functions (from -2π to 2π using any scale on the x and y axis)

4) **Exponent**, **Log and Natural log** – You should know all properties and laws for exponents and logs and be able to apply them correctly in a problem.

5) **Area Formulas** -   rectangle, square, triangle, equilateral triangle, trapezoid, circle

6) **Volume Formulas** – sphere, cone, cylinder, prism

We will briefly review these items in the first couple of weeks of school and then you will be quizzed on them, so you need to review and practice over the summer. The quizzes will be TIMED.

Do yourself a favor and keep your Pre Calculus notebook!!!! You may also want to visit khanacademy.org, flippedmath.com, and/or kutasoftware.com for videos and/or practice problems. Email me over the summer at hmote@wcpss.net if you have any questions. I will not be checking email everyday, but I will check it at least once a week. I am looking forward to a fun-filled semester of Calculus with all of you in the fall 😊

Mrs. Mote