

West Virginia AP Calculus AB Summer Institute

June 26-29, 2018 – University High School, Morgantown, WV

Consultant: Kenny Moore

Goals for the workshop: To address as many topics in the AB Calculus curriculum as possible and help participants become better prepared to teach those topics. To help participants become more confident with the topic in the AB Calculus curriculum. To help participants become better aware of how to use College Board materials and understand its goals.

Agenda

Day 1

Morning Session:

Greeting and Introductions

Helpful Hints – I hope

Definition of Derivative

Let's pick some low hanging fruit and give Bill Gates \$1000 in the process

“Unconfuse” your students with “Power”

f, f', f''

Lunch Break:

Afternoon Session:

Let's compare some graphs

Allow “Dimensional Analysis” to lead you to the Promised Land

Related Rates - wait for “This Magic Moment”

Take Optimization to the Max (Was Monticello our 3rd president?)

Day 2

Morning Session:

Common errors on AP exam

2015/AB 4 How much fun can “ $mx+b$ ” be?

Allow Sir Isaac to make “Motion Problems” come alive!

Crazy Bunch of Dang Coaches

Vertical and Horizontal Motion Combined

How “average” are you

Lunch Break:

Afternoon Session:

AP commitment to Equity of Assess

3 of 6 Big Theorems

Finding high level areas without calculus

FTC Parts I and II

Day 3

Morning Session:

Integral hands on activity

1 more Theorem makes 6

Who cares how much dang gravel is being processed?

Junk, Junk in, and Junk out

2015/AB-BC 1 (Revisit max/min – local vs global)

Have a little slope in your fields

Differential Equations (don't invent new math here)

Let's kill the puppy problem – not the puppies

Lunch Break:

Afternoon Session:

Great stuff from the College Board, Audit, Course Outline

Are you ready to be tested?

Now are you ready to be the tester?

Use Released AP problems in class

Those dang kids with the internet

Day 4

Morning Session:

Slice-Formulate-Integrate, Slice-Formulate-Integrate, Slice-Formulate-Integrate

Area problems

Be "solid"

Volume of Revolution Problems

Volumes with known cross sections

Lunch Break:

Afternoon Session:

Best Practices from Participants

Inverse functions and their derivatives

Classwork, Homework, Exam Questions

Wrap up

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Graduate Credit for the Calculus Advanced Placement Summer Institute

Participants may choose to receive Graduate Credit by completing additional work that other participants are not expected to complete. This work will include:

- 1) Complete extra homework assigned each day of the institute
- 2) The development of a lesson that could be administered in any high school calculus class
- 3) Sharing the above lesson with the other participants of the APSI
- 4) Upgrading the lesson after listening to suggestions from other participants

The above will require a minimum of 15 hours of work.