MORTON EAST HIGH SCHOOL

Math Department

Graphing calculators are an integral part of Pre-Calculus and AP Calculus. You have already learned how to operate a graphing calculator in Pre-Calculus and will continue to use this valuable technology during AP Calculus at Morton East and throughout your math courses in college.

You are required to use a graphing calculator for the AP Calculus exam. If you already have a TI-Nspire or TI-84, you are already prepared.

If you do not have one yet, the Texas Instrument TI-NSpire CX is the suggested graphing calculator. Calculators can be purchased at local stores or online.

Notice: The TI-Nspire CAS (CAS stands for Computer Algebra System) and TI-89 *ARE NOT* allowed for the ACT, but are allowed for the SAT & AP exam.

Permitted on SAT & AP Exam

Permitted on ACT & AP Exam

Thank You,

AP Calculus AB & BC Teachers
Mr. Gierut: pgierut@jsmorton.org
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AP Calculus BC's AB Part of Summer Work 2019-2020

TO: All 2019/2020 AP Calculus BC Students

FROM: AP Calculus BC East Teacher
Ms. Kane—Room 351

We are pleased that you have chosen to complete your math sequence by enrolling in AP Calculus BC for next year. To help ensure your success in AP Calculus BC next year, we have created a summer review program. This program contains material that you will complete online and during the Boot Camp. The online questions contain information from your previous math courses *and* the AP Calculus A topics on Limits & Continuity and Parametric, Vector, Polar, & Logistic functions will be completed during the Boot Camp.

Calculus BC's AB Part of Summer Work Requirements:

- Complete Part I online at Khan Academy by June 3rd
- Complete Part II online at Khan Academy by July 10th
- Complete Part III online at Khan Academy by August 7th

Summer work grade (see rubric below) will be given based upon successful completion of each part on-time and participation in the activity day.

AP Calculus BC's AB Part of Summer Work Rubric

	5	4	3	2	1	0
Part I	Completed all topics on-time with 100% success on topics	Completed all topics on-time with 86-99% success on topics	Completed all topics on-time with 75-85% success on topics	Completed all topics on-time with 61-74% success on topics	Completed all topics on-time with 50-60% success on topics	Not completed on-time OR missing topics OR less than 50% success on topics
Part II	Completed all topics on-time with 100% success on topics	Completed all topics on-time with 86-99% success on topics	Completed all topics on-time with 75-85% success on topics	Completed all topics on-time with 61-74% success on topics	Completed all topics on-time with 50-60% success on topics	Not completed on-time OR missing topics OR less than 50% success on topics
Part III	Completed all topics on-time with 100% success on topics	Completed all topics on-time with 86-99% success on topics	Completed all topics on-time with 75-85% success on topics	Completed all topics on-time with 61-74% success on topics	Completed all topics on-time with 50-60% success on topics	Not completed on-time OR missing topics OR less than 50% success on topics

Below is a list of supplies you will NEED for AP Calculus. Shop for the items when they are on sale and be prepared the first day of school. AP Calculus is a college-level course and you are expected to be prepared with your materials each day.

***AP Calculus Supplies Needed*:**
Pencils/Erasers
Binder
Paper
Graphing Calculator (TI-Nspire CX or TI-Nspire CX CAS)

********** YOU MUST HAVE A GRAPHING CALCULATOR **********
********** EVERY DAY, IN CLASS AND AT HOME **********

AP Calculus BC's AB Part of Summer Work 2019-2020

Part I: Must be completed by June 3rd

a) Functions: Unit Test
https://www.khanacademy.org/math/algebra2/manipulating-functions/modal/test/manipulating-functions-unit-test

Write your work for these questions. Turn in your work on the 1st day of Boot Camp. Before completing the Test, you may want to practice or watch videos on functions:
(Practice at: https://www.khanacademy.org/math/algebra2/manipulating-functions)

b) Polynomials: Unit Test
https://www.khanacademy.org/math/algebra2/polynomial-functions/modal/test/polynomial-functions-unit-test

Write your work for these questions. Turn in your work on the 1st day of Boot Camp. Before completing the Test, you may want to practice or watch videos on polynomials:
(Practice at: https://www.khanacademy.org/math/algebra2/polynomial-functions)

Part II: Must be completed by July 10th

a) Radical Relationships: Unit Test
https://www.khanacademy.org/math/algebra2/radical-equations-and-functions/modal/test/radical-equations-and-functions-unit-test

Write your work for these questions. Turn in your work on the 1st day of school. Before completing the Test, you may want to practice or watch videos on radical relationships:
(Practice at: https://www.khanacademy.org/math/algebra2/radical-equations-and-functions)

b) Rational Relationships: Quiz 1
https://www.khanacademy.org/math/algebra2/rational-expressions-equations-and-functions/modal/quiz/simplify-rational-expressions-quiz

Write your work for these questions. Turn in your work on the 1st day of school. Before completing the Quiz, you may want to practice or watch videos on rational relationships:
(Practice at: https://www.khanacademy.org/math/algebra2/rational-expressions-equations-and-functions)

c) Rational Relationships: Quiz 2
https://www.khanacademy.org/math/algebra2/rational-expressions-equations-and-functions/modal/quiz/multiplying-and-dividing-rational-expressions-quiz

Write your work for these questions. Turn in your work on the 1st day of school. Before completing the Quiz, you may want to practice or watch videos on rational relationships:
(Practice at: https://www.khanacademy.org/math/algebra2/rational-expressions-equations-and-functions)

d) Rational Relationships: Quiz 3
https://www.khanacademy.org/math/algebra2/rational-expressions-equations-and-functions/modal/quiz/nested-fractions-quiz

Write your work for these questions. Turn in your work on the 1st day of school. Before completing the Quiz, you may want to practice or watch videos on rational relationships:
(Practice at: https://www.khanacademy.org/math/algebra2/rational-expressions-equations-and-functions)

Part III: Must be completed by Aug 7th

a) **Exponential Growth & Decay:** Quiz 1
Write your work for these questions. Turn in your work on the 1st day of school. Before completing the Quiz, you may want to practice or watch videos on exponential growth:
(Practice at: https://www.khanacademy.org/math/algebra2/exponential-growth-and-decay-alg-2)

https://www.khanacademy.org/math/algebra2/exponential-growth-and-decay-alg-2/modal/quiz/solving-exponential-equations-using-properties-of-exponents-quiz

b) **Exponentials & Logarithms:** Quiz 2
Write your work for these questions. Turn in your work on the 1st day of school. Before completing the Quiz, you may want to practice or watch videos on exponents & logarithms:
(Practice at: https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions)

https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions/modal/quiz/change-of-base-formula-for-logarithms-quiz

c) **Exponentials & Logarithms:** Quiz 3
Write your work for these questions. Turn in your work on the 1st day of school. Before completing the Quiz, you may want to practice or watch videos on exponents & logarithms:
(Practice at: https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions)

https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions/modal/quiz/solving-exponential-models-quiz

d) **Advanced Equations & Functions:** Quiz 1
Write your work for these questions. Turn in your work on the 1st day of school. Before completing the Quiz, you may want to practice or watch videos on advanced functions:
(Practice at: https://www.khanacademy.org/math/algebra2/advanced-functions)

https://www.khanacademy.org/math/algebra2/advanced-functions/modal/quiz/solving-equations-by-graphing-quiz

AP Calculus BC Summer Review – Calculus A Topics

- Complete the following assignments from the textbook:
  Calculus: Graphical, Numerical, Algebraic, Third Edition, Finney, Demana, Waits & Kennedy

  As in all mathematics courses, the importance of showing your work and arriving at the correct answer are equally important. Answers only are not acceptable for an AP course. Please make sure to show all your steps in a clear way.

  Remember the following 3 items as you are writing your work: notation, notation, notation.

  The problems that warrant the use of a graphing calculator are indicated with a .

  You can find some helpful lessons available at: www.mathkanection.com

Limits
HW1 – p.66 #7, 10, 20, 21, 28, 29, 38, 39, 44, 53, 57, 67, 68, 69, 70
HW2 – p.76 #4, 14, 15, 19, 21, 27, 28, 55, 62, 64

Parametric Equations, Vectors, Polar, Logistic Functions & Partial Fractions
HW3 – p.34 # 1, 3, 39, 41; p.535 Quick Review #1, 3, 4; p.537 #47, 49
HW4 – p.545 #1, 7, 15, 18, 21, 55
HW5 – p.557 # 11, 15, 17, 23, 25; p.561 #31
HW6 – p.369 #1, 3, 4; p.375 # 59bc (& identify the carrying capacity)

Continuity
HW7 – p.84 #2, 7, 11, 12, 13, 14, 19a, 20a, 23a, 41, 42, 47, 48, 58

Tangent Lines
HW8 – p.92 #4, 6, 7, 9abc, 10abc, 24, 25, 29, 33ab, 37, 38

HW9 – Study for the Test

****There <u>will</u> be a test on the AP Calculus A topics (Parametrics, Vectors, Polar, Logistic Functions, Partial Fractions, Limits, Continuity, & Tangent Lines) on the last day of Calculus BC Boot Camp.****

Remember that you selected to take BC and were willing to work at this challenging pace of learning two semesters of college-level Calculus.