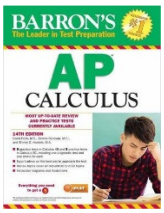
Summer preparation for AP Calculus AB

Calculus AB covers at-least as much material as a standard first semester of college Calculus. The course will cover:
Functions and Graphs
Limits and Continuity
Differential Calculus
Integral Calculus

Please review functions (chapter 1), and limits & continuity (chapter 2), using ***Barron's AP Calculus***.

Ignore the parametric functions (- this is a topic for AP Calc BC), but work through the multiple choice questions in ch.1, & 2. You will be assessed on these topics early in September.

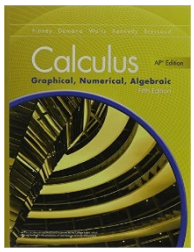
Barron's AP Calculus, 14th Edition by David Bock M.S. (Author), Dennis Donovan M.S. (Author), Shirley O. Hockett M.A. (Author)



ISBN-13: 978-1438008592
ISBN-10: 1438008597

We will use the following textbook.

ADVANCED PLACEMENT CALCULUS 2016 GRAPHICAL NUMERICAL ALGEBRAIC FIFTH EDITION STUDENT EDITION 5th ed. Edition



By Finney, Demana, Waites,.. PRENTICE HALL
ISBN-13: 978-0133311617
ISBN-10: 0133311619

Please review and study functions (chapter 1.1 – 1.3, 1.5, 1.6), limits & continuity (chapter 2.1 – 2.4) using the textbook**.** Redo the worked out problems**.**
We will have to be very efficient with our time in AP Calculus in order to be confident about the exam in May. Come prepared next year to discover, enjoy, and explore many interesting and practical applications of Calculus using the TI 84, or fancier graphing calculators and computer programs. Please do not hesitate to phone me at (540)898-1084 or send e-mail to awilson@fredericksburgacademy.org if you have any questions or need help with your summer review.

Trigonometric Functions are extremely important in this course. In case you are a bit rusty with the Trigonometric Functions, please review their properties, graphs, and identities.

These are examples of what you need to be comfortable with in Trigonometry ***(without a calculator)*** before starting AP Calculus (AB)

- Values of Trigonometric Functions at standard angles: $0, \frac{\pi}{6}, \frac{\pi}{4}, \frac{\pi}{3}, \frac{\pi}{2}$

- Evaluate Trigonometric Functions using reference angles:
  $sin\frac{5\pi}{3}, cot\frac{17\pi}{4}, sec\frac{-7\pi}{6`}, tan\frac{5\pi}{2,}, csc\frac{-13\pi}{6}, cos\frac{13\pi}{4}$

- Graph all six trig functions including their transformations (such as y = sin 2x)

- Solve trig equations: $tan2x = \sqrt{3}, 0 \leq x \leq 2\pi$

- Graph the inverse trig functions: $y = \sin^{-1}x$, $y = \cos^{-1}x$, $y = \tan^{-1}x$

- Simplify expressions involving inverse trig functions: $\sin^{-1}(\sin\frac{2\pi}{3})$

- Trigonometric identities: Reciprocal, Quotient, Even-Odd, Pythagorean, Co-Function, Sum/Difference, Double-Angle, Half-Angle

- Use trigonometric identities to simplify expressions: $\frac{sin2x}{tanx} + 2sin^2x$

You can use your calculator to check your answers. You can also use online resources such as Khan Academy for more practice.