

AP Calculus (BC)
Limits and Continuity

The list below contains the specific *learning targets* for the unit on limits and continuity. Before the unit test, you should be able to place a check next to each statement as being true.

- I can interpret a function represented analytically, graphically, numerically, or verbally.
- I can describe the concept of a limit in my own words.
- I can describe how a limit can fail to exist.
- I can describe the difference between a one-sided limit and a two-sided limit.
- I can evaluate a limit using the following approaches:
 - numerical
 - graphical
 - direct substitution
 - factor reduction
 - rationalization
 - complex fraction simplification
- I can evaluate limits involving infinity.
- I can define vertical and horizontal asymptotes and end-behavior using limits.
- I can define continuity at a point.
- I can describe common discontinuities in a function.
- I understand the conditions and conclusions of the Intermediate Value Theorem.

Textbook Assignments

The exercises below are from *Calculus: Graphical, Numerical, Algebraic* by Finney, Demana, Waits, and Kennedy. These specific problems are the bare minimum that should be completed after each lesson, but you are encouraged to attempt more if needed.

- 2.1 Concept of a Limit **pg 62: 1-6, 31, 32, 45-50, 59-62**
- 2.1 Evaluating Limits **pg 62: 17-20, 22, 24, 25, 27, 28, 30, 43, 44**
- 2.2 Infinite Limits **pg 71: 9-12, 15, 16, 17-22 (part a only)**
- 2.2 Limits at Infinity **pg 71: 23-28, 43-50**
- 2.3 Continuity **pg 80: 11-18, 20, 21, 23, 26, 29, 34, 35-38, 41, 42, 45**

Assignments are subject to change in class.