

AP Calculus (BC)
Integral Applications

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

- I can use integrals to calculate the net change in a quantity.
- I can solve initial value problems.
- I can find the displacement, distance traveled, and final position of an object moving along a line given its velocity function.
- I can find the area bounded by two or more curves.
- I can find the volume of a solid with a defined cross-sectional area.
- I can find the volume of a solid of revolution using the washer method.

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.

- 6.1 Initial Value Problems **pg 312: 31-36, 39, 41**
- 7.1 Displacement and Distance Traveled **pg 371: 1, 3, 7, 10, 12-16, 19**
- 7.1 Net Change **pg 371: 21, 22, 23, 24, 26, 31**
- 7.2 Area **pg 380: 1, 3, 7, 9, 19, 24, 41, 43**
- 7.3 Cross-Sectional Volume **pg 390: 3-10**
- 7.3 Solids of Revolution **pg 390: 23, 25, 33, 37, 45, 49, 51, 52, 65**

Assignments are subject to change in class.