AP Calculus (BC)

Derivative Applications

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

- ☐ I can solve optimization problems.
- ☐ I can use linearization to approximate function values.
- ☐ I can use differentials to approximate the change in function values.
- ☐ I can solve problems involving motion along a line.
- ☐ I can solve problems involving related rates.
- ☐ I can use l'Hôpital's Rule to evaluate indeterminate limits in the form 0/0 or ∞/∞.

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.

4.4 Optimization **pg 214: 5, 6, 8, 11, 12, 14, 15, 17**
4.4 Optimization **pg 214: 34, 35, 37, 41, 44, 48**
4.5 Linearization / Differentials **pg 229: 11-14, 19, 21, 29**
4.5 Linearization / Differentials **pg 229: 37, 38, 39, 41, 43, 45**
3.4 Rectilinear Motion **pg 129: 2, 13, 16, 20, 25, 29, 33**
4.6 Related Rates **pg 237: 3, 6, 7, 9, 13**
4.6 Related Rates **pg 237: 17, 21, 22, 24, 27, 29, 31, 33, 35**
8.1 l'Hôpital's Rule **pg 423: 11, 14, 15, 16, 17, 21, 31, 32, 43, 44**

Assignments are subject to change in class.