

AP Calculus (BC)

Parametric, Vector, and Polar Functions

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

- I can calculate derivatives involving parametric functions.
- I can calculate the arc length of a curve for a defined interval.
- I can relate parametric and vector functions.
- I can calculate derivatives involving polar functions.
- I can find area of regions defined by polar equations.
- I can solve problems involving planar motion.

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.

- 10.1 Slope of Parametric Curves **pg 518: 1-10**
- 7.4 Arc Length **pg 399: 1-9 (odd)**
- 10.1 Arc Length **pg 518: 11, 13, 16, 24**
- 10.3 Vector Functions **pg 537: 5, 15, 25, 27, 28b, 29, 31, 32**
- 10.6 Slope of Polar Curves **pg 566: 1-11 (odd), 43**
- 10.6 Area Involving Polar Curves **pg 566: 13-29 (odd), 44**

Assignments are subject to change in class.