

## Honors Calculus

### *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 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
  - Squeeze Theorem
- I can evaluate infinite limits and use them to define vertical asymptotes.
- I can define continuity at a point.
- I can describe common discontinuities in a function.

### Textbook Assignments

The exercises below are from *Calculus of a Single Variable, 7<sup>th</sup> edition*, by Larson, Hostetler, and Edwards. These specific problems are the bare minimum that should be completed after each lesson, but you are encouraged to attempt more if needed.

- 1.2 Numerical and Graphical Limits **pg 54: 3, 8, 9-18, 47**
- 1.3 Analytical Limits **pg 65: 17, 25, 27, 29, 35, 51, 62, 67, 70**
- 1.3 Analytical Limits **pg 65: 37, 39, 53, 57, 69, 84, 89, 93**
- 1.4 Continuity **pg 76: 1, 3, 5, 7, 9, 11, 15, 17, 19, 37, 43, 47, 57, 59, 87**
- 1.5 Infinite Limits **pg 85: 3, 11, 15, 17, 29, 32, 33, 35, 39, 41, 43**