Unit 1 – Limits: Objectives / Study Guide

1-2
- ❑ I understand the concept and notation of a limit.
- ❑ I know how to find a limit "numerically" through creating a table of values.
- ❑ I know how to find a limit "graphically" by analyzing a graph.

- ❑ I know the 4 scenarios after direct substitution
- ❑ I know the 3 cases when no limit exists and how to find them both "numerically" and "graphically".

1-3
- ❑ I know all of the limit properties (1.1 – 1.6) and can use them to find a limit analytically through a *direct substitution* technique.
- ❑ I know how to find a limit analytically through a *factoring* technique.
- ❑ I know how to find a limit analytically through a *rationalizing* technique.
- ❑ I know how to find a limit using the *special trigonometry* limits.

1-4
- ❑ I know the 3 types of non-continuous functions and which have removable discontinuity which have non-removable discontinuity.
- ❑ I know how to find a one-sided limit.
- ❑ I understand the properties of continuity.
- ❑ I understand the Intermediate Value Theorem.

1-5
- ❑ I know how to find a limit by creating a table of values, and can recognize from that table if the limit is infinite.
- ❑ I can tell by looking at a graph if a limit is infinite.
- ❑ I know how to find vertical asymptotes of a function, without the use of a calculator
- ❑ I understand that if the denominator is approaching zero, and the numerator isn't, then the limit is infinite.

3-5
- ❑ I can find a limit as x approaches infinity by creating a table of values.
- ❑ I know how to find horizontal asymptotes of a function.
- ❑ I understand that if the denominator is approaching infinity, and the numerator isn't, then the limit is zero.
- ❑ I know the 3 different possibilities as x approaches infinity of functions in the form of polynomial over polynomial, and can find the limit of each based on their degrees.

Unit 1 Homework Assignments

1-2: 2-6, 11-22, 53, 54, 67, 69, 70

1-3: 2, 3-81 (odd)

1-4: 1-65 (odd), 87-97 (odd), 103, 104, 112

1-5: 1-51 (odd), 61

3-5: 1-49 (odd)

Review (Chapter 1): 3-45 (odd), 51-59 (odd), 63, 71-81 (odd)

Review (Chapter 3): 53-65 (odd)