

MAC2311 Test 1
2.2-2.5, 4.5 (Limits)

2.2 Finding Limits Graphically and Numerically.

Major Objectives

- Estimate the limit using a table (2.2 Exercises 2-10)
- Estimate the limit using the graph of a function (2.2 Exercises 23-32)
<http://math15fun.com/wp-content/uploads/2017/02/MAC2311-Limits-Graphically.pdf>
- Prove the value of the limit using the delta-epsilon definition (2.2 Exercises 47-50)

2.3 Evaluating Limits Analytically

Major Objectives

- Find the limit analytically using direct substitution (2.3 Exercises 5-18, 23-36)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20by%20Direct%20Evaluation.pdf>
- Find the limit analytically using the dividing out technique (2.3 Exercises 47-52, 74)
- Find the limit analytically using the rationalizing technique (2.3 Exercises 52-56)
- Find the limit analytically by clearing fractions. (2.3 Exercises 57-58, 73)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Removable%20Discontinuities.pdf>
- Find the limit analytically using the squeeze theorem (2.3 Exercises 95-100)
- Find the limit using the special limits (2.3 Exercises 63, 64, 65, 67, 69, 75, 76)
- Find the limit analytically by changing to sines and cosines. (2.3 Exercises 66, 68, 70)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Removable%20Discontinuities%20Trig.pdf>
- Apply the properties of limits (2.3 Exercises 37-40)

Memorize

- Three special limits (Theorem 2.9 pg 89)
- Properties of limits (constants, adding, subtracting, multiplying, and dividing)

2.4 Continuity and One-sided Limits

Major Objectives

- Discuss the continuity of a function using a graph (2.4 Exercises 33-36)
- Discuss the continuity of a function (2.4 Exercises 75-82)
- Discuss the type of discontinuity (removable or non removable) (2.4 Exercises 41-60)
<https://cdn.kutasoftware.com/Worksheets/Calc/02%20-%20Continuity.pdf>
- Apply the Intermediate Value Theorem (2.4 Exercises 99-104)
- Find the one-sided limit (2.4 Exercises 11-32)

Memorize

- Criteria for continuity (pg 94)
- Criteria and Result for Intermediate Value Theorem (pg 101)

2.5 Infinite Limits

Major Objectives

- Find limits and the one-sided limits at vertical asymptotes (2.5 Exercises 37-52)
- Find infinite limits with a table (2.5 Exercises 11-16)
- Find infinite limits graphically (2.5 Exercises 3-6)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Essential%20Discontinuities.pdf>

Memorize

- Theorem 2.14 (pg 109)
- Properties of Infinite Limits (pg 111)

4.5 Limits at Infinity

Major Objectives

- Find limits at infinity from a graph (Use worksheets and quizzes)
- Find limits at infinity from a table (4.5 Exercises 53-56)
- Find limits at infinity (4.5 Exercises 17-42)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Infinity.pdf>