

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 1-6)
- Estimate the limit using the graph of a function (2.2 Exercises 17-24)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Jump%20Discontinuities%20and%20Kinks.pdf>
- Prove the value of the limit using the delta-epsilon definition (2.2 Exercises 39-42)

2.3 Evaluating Limits Analytically

Major Objectives

- Find the limit analytically using direct substitution (2.3 Exercises 5-36)
<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 51-56)
- Find the limit analytically using the rationalizing technique (2.3 Exercises 57-60)
- Find the limit analytically by simplifying a complex fraction. (2.3 Exercises 61-62)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Removable%20Discontinuities.pdf>
- Find the limit analytically using the squeeze theorem (2.3 Exercises 97-100)
- Find the limit using the special limits (2.3 Exercises 79, 85, 87)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Removable%20Discontinuities%20Trig.pdf>
- Apply the properties of limits (2.3 Exercises 41-44)

Memorize

- Three special limits (Theorem 2.9 pg 85)
- 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 29-32)
- Discuss the continuity of a function (2.4 Exercises 29-36)
- Discuss the type of discontinuity (removable or non removable) (2.4 Exercises 37-62)
<https://cdn.kutasoftware.com/Worksheets/Calc/02%20-%20Continuity.pdf>
- Apply the Intermediate Value Theorem (2.4 Exercises 99-102)
- Find the one-sided limit (2.4 Exercises 7-28)

Memorize

- Criteria for continuity (pg 90)

2.5 Infinite Limits

Major Objectives

- Find limits and the one-sided limits at vertical asymptotes (2.5 Exercises 37-44)
<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Essential%20Discontinuities.pdf>

Memorize

- Theorem 2.14 (pg 105)

4.5 Limits at Infinity

Major Objectives

- Find limits at infinity from a graph
- Find limits at infinity (4.5 Exercises 19-24)

<https://cdn.kutasoftware.com/Worksheets/Calc/01%20-%20Limits%20at%20Infinity.pdf>