

Math 125 Unit 2 Objectives

Section 8.1 Basic Integration Rules

- Review procedures for fitting an integrand to one of the basic integration formulas.

Section 8.2 Integration by Parts

- Find an antiderivative using integration by parts.

Section 8.3 Trigonometric Integrals

- Solve trigonometric integrals involving powers of sine and cosine.
- Solve trigonometric integrals involving powers secant and tangent.
- Solve trigonometric integrals involving sine-cosine products with different angles.

Section 8.4 Trigonometric Substitution

- Use trigonometric substitution to solve an integral.

Section 8.5 Partial Functions

- Understand the concept of a partial fraction decomposition.
- Use partial fraction decomposition with linear factors to integrate rational functions.
- Use partial fraction decomposition with quadratic factors to integrate rational functions.

Section 8.6 Integration by Tables and Other Integration Techniques

- Evaluate an indefinite integral using a table of integrals.
- Evaluate an indefinite integral using reduction formulas.
- Evaluate an indefinite integral involving rational functions of sine and cosine.

Section 8.7 Indeterminate Forms and L'Hopital's Rule

- Recognize limits that produce indeterminate forms.
- Apply L'Hopital's Rule to evaluate a limit.

Section 8.8 Improper Integrals

- Evaluate an improper integral that has an infinite limit of integration.
- Evaluate an improper integral that has an infinite discontinuity.