

Math 125 Unit 1 Objectives

Section 5.6 Inverse Trigonometric Functions: Differentiation

- Develop properties of the six inverse trigonometric functions.
- Differentiate an inverse trigonometric function.
- Review basic differentiation rules for elementary functions.

Section 5.7 Inverse Trigonometric Functions: Integration

- Integrate functions whose anti-derivatives involve inverse trigonometric functions.
- Use the method of completing the squares to integrate a function.
- Review basic integration rules involving elementary functions.

Section 5.8 Hyperbolic Functions

- Differentiate and integrate hyperbolic functions.
- Differentiate and integrate functions involving inverse hyperbolic functions.

Section 7.1 Area of a Region Between Two Curves

- Find the area of a region between two curves using integration.
- Find the area of a region between two intersecting curves using integration.

Section 7.2 Volume: The Disk Method

- Find the volume of a solid of revolution using the disk method.
- Find the volume of a solid of revolution using the washer method.
- Find the volume of a solid with known cross sections.

Section 7.3 Volume: The Shell Method

- Find the volume of a solid of revolution using the shell method.

Section 7.4 Arc Length and Surfaces of Revolution

- Find the arc length of a smooth curve.
- Find the area of a surface of revolution.

Section 7.5 Work

- Find the work done by a constant force.

- Find the work done by a variable force.

Section 7.6 Moments, Centers of Mass, and Centroids

- Find the center of mass in a one-dimensional system.
- Find the center of mass in a two-dimensional system.
- Find the center of mass of a planar region.

Section 7.7 Fluid Pressure and Fluid Force

- Find the fluid pressure and fluid force.