Name:

University ID:

Thomas Edison State University

Calculus II (MAT-232)

Section no.:

Semester and year:

**Written Assignment 1**

Answer all assigned exercises, and show all work. Each exercise is worth 5 points.

**Section 5.2**

**2.** **Find the volume of the solid with cross-sectional area *A*(*x*).**



**6.** **Find the volume of a pyramid of height 160 feet that has a square base of side 300 feet. These dimensions are half those of the pyramid in example 2.1. How does the volume compare?**

**10.** **A dome “twice as big” as that of exercise 9 (see text) has outline for (units of feet). Find its volume.**

**12.** **A pottery jar has circular cross sections of radius inches for  Sketch a picture of the jar and compute its volume.**

**18.** **Compute the volume of the solid formed by revolving the region bounded by  about (a) the *x*-axis; (b) *y* = 4.**

**20.** **Compute the volume of the solid formed by revolving the region bounded by and about (a) the *y*-axis; (b) *x* = 1.**

**26.** **Let *R* be the region bounded by and** *y* = 4**. Compute the volume of the solid formed by revolving *R* about the given line.**

1. *y* = 4 (b) the *y*-axis (c) *y* = 6

(d) *y* = –2 (e) *x* = 2 (f) *x* = –4

**32.** **Suppose that the circle  is revolved about the *y*-axis. Show that the volume of the resulting solid is .**

**Section 5.3**

**4.** **Sketch the region, draw in a typical shell, identify the radius and height of the shell, and compute the volume for the region bounded by and  revolved about .**

**6.** **Sketch the region, draw in a typical shell, identify the radius and height of the shell, and compute the volume for the region bounded by and , revolved about** *x* = 2**.**

**8.** **Sketch the region, draw in a typical shell, identify the radius and height of the shell, and compute the volume for the region bounded by , revolved about** *y* = 4**.**

**12.** **Use cylindrical shells to compute the volume of the region bounded by and** *x* = 4**, revolved about** *y* = 2**.**

**22.** **Use the best method available to find the volume of the region bounded by  and the *y*-axis revolved about (a) the *x*-axis, (b) the *y*-axis, (c) *x* = –1, and (d) *y* = –1.**

**24.** **Use the best method available to find the volume of the region bounded by  and the x-axis revolved about the (a) *x*-axis and (b) *y*-axis.**

**26.** **Use the best method available to find the volume of the region bounded byand revolved about (a) *y* = 1, (b) *x* = 1, (c) the *y*-axis, and (d) the *x*-axis.**

**Section 5.4**

**4.** **Approximate the length of the curve using *n* secant lines for *n* = 2; *n* = 4.**



**14. Compute the arc length exactly.**



**30. Set up the integral for the surface area of the surface of revolution, and approximate the integral with a numerical method.**

**** revolved about the *x*-axis

**32. Set up the integral for the surface area of the surface of revolution, and approximate the integral with a numerical method.**

**** revolved about the *x*-axis

**36. Set up the integral for the surface area of the surface of revolution, and approximate the integral with a numerical method.**

**** revolved about the *x*-axis