Math 175  

Worksheet 4  

Volumes I

A three-dimensional vase is created by rotating the curve \( x = 1 + 0.5\sin(0.7y) \) about the \( y \)-axis from \( y = 0 \) to \( y = 9 \) as shown.

1. Axis of integration: ______________

2. Find the volume of a typical slice. Use the blank space below to

   (a) Draw a typical slice and label its dimensions with appropriate arrows.

   (b) Draw the \( x-y \) cross section, the corresponding slice and label its dimensions. Labeling must be consistent.

   (c) Find the volume of the typical slice in terms of the variable of integration.

Your drawings should look similar to what was given on Worksheet 1.