# 34 Lecture - MTH101

# **Important Subjective**

#### What is the formula for finding the volume of a solid using the disk method?

**Answer:** The formula for finding the volume of a solid using the disk method is  $V = ??(a \text{ to b}) [f(x)]^2 dx$ .

## What is the formula for finding the volume of a solid using the washer method?

**Answer:** The formula for finding the volume of a solid using the washer method is  $V = ??(a \text{ to } b) [R(x)^2 - r(x)^2] dx$ .

#### What is the difference between the disk method and the washer method?

**Answer:** The disk method is used when the cross-sections are disks, while the washer method is used when the cross-sections are washers.

#### What is the difference between the inner radius and the outer radius in the washer method?

**Answer:** The inner radius is the distance from the center of the cross-section to the inner edge, while the outer radius is the distance from the center of the cross-section to the outer edge.

#### How do you know when to use the disk method or the washer method?

**Answer:** You use the disk method when the cross-sections are disks, and the washer method when the cross-sections are washers.

# What is the formula for finding the volume of a solid when the cross-sections are semicircles?

**Answer:** The formula for finding the volume of a solid when the cross-sections are semicircles is V = 1/2 ??(a to b)  $[f(x)]^2 dx$ .

## What is the formula for finding the volume of a solid when the cross-sections are squares?

**Answer:** The formula for finding the volume of a solid when the cross-sections are squares is  $V = ?(a \text{ to } b) [f(x)]^2 dx$ .

#### What is the difference between a horizontal slice and a vertical slice?

**Answer:** A horizontal slice is parallel to the x-axis, while a vertical slice is parallel to the y-axis.

# How do you find the volume of a solid using the disk or washer method when the function is not given in terms of x?

**Answer:** You can use the formula  $V = ??(a \text{ to b}) [f(y)]^2 dy$  for the disk method and  $V = ??(a \text{ to b}) [R(y)^2 - r(y)^2] dy$  for the washer method.

### Can the disk and washer method be used for any solid?

**Answer:** No, the disk and washer method can only be used for solids that can be sliced into disks or washers perpendicular to a given axis.