

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 $V = \int_a^b [f(x)]^2 dx$.

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 $V = \int_a^b [R(x)^2 - r(x)^2] dx$.

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 $V = \frac{1}{2} \int_a^b [f(x)]^2 dx$.

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 $V = \int_a^b [f(x)]^2 dx$.

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 $V = \int_a^b [f(y)]^2 dy$ for the disk method and $V = \int_a^b [R(y)^2 - r(y)^2] dy$ 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.