

# 35 Lecture - MTH101

## Important Mcqs

**What is the formula for finding the volume of a solid using the cylindrical shells method?**

- a)  $V = 2\pi rh$
- b)  $V = 2\pi rh + 2\pi r^2$
- c)  $V = \pi r^2 h$
- d)  $V = \pi r^2$

**Answer: c)  $V = \pi r^2 h$**

**When using the cylindrical shells method, what shape are the "shells" that are added up to find the volume of the solid?**

- a) Cylinders
- b) Rectangles
- c) Triangles
- d) Spheres

**Answer: a) Cylinders**

**When using the cylindrical shells method, what axis is typically used to form the cylinders?**

- a) x-axis
- b) y-axis
- c) z-axis
- d) None of the above

**Answer: a) x-axis**

**Which of the following is a necessary step when using the cylindrical shells method to find the volume of a solid?**

- a) Find the limits of integration

- b) Take the derivative of the function
- c) Solve for the area under the curve
- d) None of the above

**Answer: a) Find the limits of integration**

**When using the cylindrical shells method, what is typically the function used to find the height of the shells?**

- a) The function that defines the curve rotated about the axis
- b) The function that defines the axis of rotation
- c) The function that defines the radius of the shell
- d) None of the above

**Answer: a) The function that defines the curve rotated about the axis**

**What is the typical range of the radius when using the cylindrical shells method?**

- a) 0 to the length of the curve
- b) 0 to infinity
- c) 0 to the height of the curve
- d) None of the above

**Answer: a) 0 to the length of the curve**

**When using the cylindrical shells method, what is the typical range of the height of the shells?**

- a) 0 to the length of the curve
- b) 0 to infinity
- c) 0 to the height of the curve
- d) None of the above

**Answer: c) 0 to the height of the curve**

**What is the formula for finding the volume of a cylindrical shell?**

- a)  $V = 2\pi rh$

b)  $V = 2\pi rh + 2\pi r^2$

c)  $V = \pi r^2 h$

d)  $V = \pi r^2$

**Answer: c)  $V = \pi r^2 h$**

**What is the main advantage of using the cylindrical shells method over other methods for finding volumes?**

a) It is easier to set up

b) It is more accurate

c) It works for any solid of revolution

d) None of the above

**Answer: c) It works for any solid of revolution**

**What is the typical shape of the cross-sections of the solid when using the cylindrical shells method?**

a) Circles

b) Rectangles

c) Triangles

d) Spheres

**Answer: a) Circles**