37 Lecture - MTH101

Important Mcqs

What is the formula for finding the area of a surface of revolution?

A. A = 2? ? [a,b] f(x) dx

B. A = 2? ? [a,b] f(x) ?(1 + (f'(x))²) dx

C. A = ? ? [a,b] f(x) dx

D. A = ? ? [a,b] f(x) ?(1 + (f'(x))²) dx

Answer: B

What is the axis of rotation in the context of the surface area of a surface of revolution?

A. The line or axis about which the curve is being rotated to form a three-dimensional shape.

B. The line or axis about which the curve is being translated to form a two-dimensional shape.

C. The line or axis about which the curve is being reflected to form a three-dimensional shape.

D. The line or axis about which the curve is being projected to form a two-dimensional shape.

Answer: A

Can the formula for the surface area of a surface of revolution be used to find the surface area of a sphere?

A. Yes

B. No

Answer: A

In which field of study is the surface area of a surface of revolution commonly used?

A. Biology

B. Chemistry

C. Physics

D. Mathematics

Answer: D

What is the relationship between the surface area of a surface of revolution and calculus?

A. The formula for the surface area of a surface of revolution is derived from calculus.

B. Calculus has no relation to the surface area of a surface of revolution.

C. The formula for the surface area of a surface of revolution is derived from geometry.

D. Calculus and geometry are equally important in the surface area of a surface of revolution.

Answer: A

What is the practical application of the surface area of a surface of revolution in physics?

A. Calculating the surface area of a rocket.

B. Calculating the surface area of a baseball.

C. Calculating the surface area of a sphere.

D. Calculating the surface area of a light bulb.

Answer: A

What is the formula for finding the area of a surface of revolution when revolving around the y-axis?

A. A = 2? ? [a,b] x ?(1 + (f'(x))²) dx

B. A = 2? ? [a,b] y dx

C. A = 2? ? [a,b] y ?(1 + (f'(x))²) dx

D. A = 2? ? [a,b] x dx

Answer: C

What is the area of a surface of revolution formed by rotating the line y = 2x around the x-axis between x = 0 and x = 4??

A. 32?

B. 16?

C. 8?

D. 4?

Answer: B

Which shape has the greater surface area of revolution when rotated around the x-axis: $y = x$ or $y = x^2$?

A. $y = x$

B. $y = x^2$

C. They have the same surface area of revolution.

D. It depends on the bounds of integration.

Answer: B

What is the relationship between the surface area of a surface of revolution and analytical geometry?

A. The formula for the surface area of a surface of revolution is derived from analytical geometry.

B. Analytical geometry has no relation to the surface area of a surface of revolution.

C. The formula for the surface area of a surface of