

Math 2315 - Calculus II

Quiz #8 - 2007.10.08

Solutions

1. State the formula for the area of a surface of revolution about the y -axis if $x = g(y)$ for $c \leq y \leq d$.

$$SA = \int_c^d 2\pi g(y) \sqrt{1 + (g'(y))^2} dy$$

2. State the formula for the area of a surface of revolution about the x -axis if $x = g(y)$ for $c \leq y \leq d$.

$$SA = \int_c^d 2\pi y \sqrt{1 + (g'(y))^2} dy$$

3. State the formula for the area of a surface of revolution about the y -axis if $y = f(x)$ for $a \leq x \leq b$.

$$SA = \int_a^b 2\pi x \sqrt{1 + (f'(x))^2} dx$$

4. State the formula for the area of a surface of revolution about the x -axis if $y = f(x)$ for $a \leq x \leq b$.

$$SA = \int_a^b 2\pi f(x) \sqrt{1 + (f'(x))^2} dx$$