

King Fahd University of Petroleum and Minerals
Quiz 2 Math 102-132 Duration 45 minutes

Full Name:

ID:

Serial Number:

Q 1. Find the area of the region enclosed by the curves $y = e^x$ for $x \geq 0$, $\pi(y - 1) = x$ for $x \leq 0$, $y = \sin(x)$, and the line $x = \pi$.

Q 2. Find L , the length of the curve $y = x\sqrt{x}$ from $x = 0$ to $x = \frac{4}{9}b$. Find the value of b such that $L = \frac{8}{27}(\sqrt{8} - 1)$.

Q 3. Find the volume of the solid obtained by rotating the region enclosed by the curves: $y = x^2 - x^3$ and $y = 0$ about the line $x = 2$.

Q 4. Rotate the region bounded by the curves $x = \sqrt{1 - y^2}$, $y - x = 1$, and $y + x = -1$ about the line $y = -1$. Find the volume of the obtained solid.

Q 5. Find the surface area of the surface generated by rotating the curve $x = e^{2y}$ for $0 \leq y \leq 1$ about the x-axis.