

King Fahd University of Petroleum and Minerals
College of sciences
Mathematics Department
Math 102 (T051)
Quiz#4

Name:....., ID#:....., Serial#:.....

1. Find the area of the surface generated by revolving the parametric curve $x = \cos^2 t$, $y = \sin^2 t$, $0 \leq t \leq \frac{\pi}{2}$ about the y-axis.

2. If $f(x) = \sinh^3(2x)$, then find $f'(\frac{\ln 2}{2})$.

3. Evaluate the integral $\int \coth^2 x \csc^2 x \, dx$.

4. Evaluate the integral $\int_1^e x^2 \ln x \, dx$.