MTH 1126 - Test #2

SPRING, 2004

Pat Rossi Name _____

Instructions. Show clearly how you arrive at your answers.

1. Use the facts that $\ln(4) \approx 1.4$ and $\ln(3) \approx 1.1$ to approximate the following:

   (a) $\ln\left(\frac{8}{3}\right)$

   (b) $\ln(27)$

   (c) $\ln(24)$

2. Compute: $\frac{d}{dx}\underbrace{[\ln(e^x \sin(x))]}_{\ln(u)} =$

3. Compute: $\frac{d}{dx}\left[e^{\sec(x)}\right]$

4. Compute: $\int e^{5x^3} 2x^2 dx =$

5. Compute: $\int \frac{x^2+2x+2}{2x^3+6x^2+12x-7} dx =$

Remark 1 *For problems 6 and 7, draw the rectangle, partition the appropriate interval, build the Riemann Sum, and take the limit.*

6. Use the "Shell Method" to compute the volume of the solid of revolution bounded by the graphs of $y = 2x$ and $y = x^2$ about the axis $y = -2$.

7. Use the "Disk Method" to compute the volume of the solid of revolutionbounded by the graphs of $y = 2x$ and $y = x^2$ about the axis $y = -2$.