MTH 1126 - Test #3

SPRING 2008

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Instructions.   Show CLEARLY how you arrive at your answers.

1. Compute: $\frac{d}{dx}\left[e^{\cos(x)}\right] =$

2. Compute: $\int \frac{e^x}{\sqrt{4-e^{2x}}}\,dx =$

3. Given that $\ln(2) \approx 0.7$ and $\ln(5) \approx 1.6$, approximate the following:

   (a) $\ln(10)$

   (b) $\ln(50)$

4. $\int e^{3x^2}x\,dx =$

5. Compute: $\int \frac{\ln\left(\sqrt{x}\right)}{\sqrt{x}}\,dx =$

6. Compute: $\int x \ln(x)\, dx =$

7. Compute: $\frac{d}{dx}\left[\ln\left(\sin\left(x\right)\right)\right] =$

8. $\frac{d}{dx}\left[\tan^{-1}\left(\sin\left(x\right)\right)\right] =$

9. $\int \sin^3\left(x\right)\cos^4\left(x\right)\, dx =$