

MAT 122 – 001
Spring 2008
Review for Test Three
Calculators may not be used

Differentiate (problems 1 – 4)

1. $y = e^{x \sin 2x}$.

2. $y = \sqrt{1 + 2e^{3x}}$.

3. $y = \ln(x + \sqrt{x^2 - 1})$.

4. $y = \frac{\sin^2 x \tan^4 x}{(x^2 + 1)^2}$.

Integrate (problems 5 – 8)

5. $\int \frac{e^{1/x}}{x^2} dx$.

6. $\int e^x \sqrt{1 + e^x} dx$.

7. $\int \frac{2 - x^2}{6x - x^3} dx$.

$$8. \int \frac{(\ln x)^2}{x} dx.$$

Determine the limit (problems 9 & 10)

$$9. \lim_{x \rightarrow 0} \frac{e^x - 1 - x}{x^2}.$$

$$10. \lim_{x \rightarrow 0} (1 - 2x)^{1/x}$$