

MATH 152

Mrs. Bonny Tighe

QUIZ 2

7.4-7.6

25 points

NAME _____

Section _____ Wed. 2/15/06

1. Differentiate the following.

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

b) $y = 3^{\sqrt{x}}$

c) $f(x) = \sinh^3(\tanh^{-1} x)$

d) $f(x) = (\cosh^{-1} x^2)(\sqrt{x})$

2. Find the numerical value of each expression:

a) $\tan(\cos^{-1} \sqrt{3}/2) = \underline{\hspace{2cm}}$ b) $\cosh(0) = \underline{\hspace{2cm}}$ c) $\sin(\tan^{-1} x) = \underline{\hspace{2cm}}$

3. Find the equation of the tangent line to the curve $y = \ln(\ln x)$ at the point $(e, 0)$.

4. Evaluate:

a) $\int_1^2 \frac{4+u^2}{u^3} du =$ _____

b) $\int \frac{\sin^{-1} x}{\sqrt{1-x^2}} dx =$ _____

c) $\int \frac{\cos x}{1+\sin^2 x} dx =$ _____

d) $\int \frac{e^x}{1-e^{2x}} dx =$ _____

e) $\int x 2^{x^2} dx =$ _____

f) $\int \frac{1}{x\sqrt{4x^2-1}} dx =$ _____

5. Use logarithmic differentiation to find the derivative of $y = (1+x^2)^{\sin x}$