

# Reading Quiz #5

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Student I.D. # \_\_\_\_\_

Read Sections 3.7-3.9(pages 221-250) and work out the following problems.

1. Differentiate the function.

226.04  $f(x) = \cos(\ln x)$

226.12  $h(x) = \ln(x + \sqrt{x^2 - 1})$

226.18  $y = [\ln(1 + e^x)]^2$

2. Use logarithmic differentiation to find derivative of the function.

226.34  $y = \sqrt{x}e^{x^2}(x^2 + 1)^{10}$

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

226.37  $y = x^x$

226.44 Find  $y'$  if  $x^y = y^x$ .

245 Find the linearization  $L(x)$  of the function at  $a$ .

245.6  $y = \ln x$ ,  $a = 1$

245.7  $y = \cos x$ ,  $a = \pi/2$

245.10 Find the linear approximation of the function  $F(x) = \sqrt[3]{1+x}$  at  $a = 0$  and use it to approximate the numbers  $\sqrt[3]{0.95}$  and  $\sqrt[3]{1.1}$ .