

微積分A預習測驗 #4

09/26/2013(四) 09/27/2013(五)

姓名： _____ 系級： _____ 學號： _____ 分數：

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Read Chapter 3 – Derivatives (pages 169-172, 205-210) and answer the following questions.

1. Use the fact $\lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta} = 1$ to compute the limit $\lim_{\theta \rightarrow 0} \frac{\cos \theta - 1}{\theta}$.

2. Give the derivative of each of the following functions.

(a) $y = x^n$

(b) $y = \sin x$

(c) $y = \cos x$

(d) $y = \sec x$

(e) $y = \csc x$

(f) $y = \tan x$

(g) $y = \cot x$

3. Differentials.

(a) Write an expression for the linearization of f at a .

(b) If $y = f(x)$, write an expression for the differential dy .

(c) Use the differential to estimate the number $\sqrt{3.98}$.