

微積分A預習測驗 #5

09/30/2013(一)

姓名： _____ 系級： _____ 學號： _____ 分數：

Read Chapter 3 – Derivatives (pages 176-181) and answer the following questions.

1. Suppose $u = g(x)$ is differentiable at a and $y = f(u)$ is differentiable at $g(a)$. Then $y = f \circ g(x)$ is differentiable at and in fact $(f \circ g)'(a)$ is equal to .
2. State the chain rule appeared in the middle of page 176.

3. (a) Write $|x| = \sqrt{x^2}$ and use the chain rule to show that $\frac{d}{dx}|x| = \frac{x}{|x|}$.

(b) If $F(x) = |\sin x|$, find $F'(x)$ and sketch the graphs of F . Where is F not differentiable?

(c) If $G(x) = \sin |x|$, find $G'(x)$ and sketch the graphs of G . Where is G not differentiable?