

2018/10/29, Calculus Quiz (2), §2.6 ~ §3.5 (可用鉛筆、需計算過程、交回題目及答案卷)

1. Find the all asymptotes of the graph of $f(x)$. (a) $f(x) = \frac{1-x^2}{x^2+1}$. (b) $f(x) = \frac{x^2-1}{2x+4}$.
2. (a) What is the definition of the derivative of a function f at a point x_0 ?
(b) State and prove that the Differentiability implies Continuity.
3. Using the definition, calculate the derivatives of the functions.
(a) $f(x) = \sqrt{2x+1}$. (b) $g(x) = \frac{x}{x-1}$.
4. Find the derivative of $y = \frac{(\sin x + 1)(\cos x + 2)}{(\tan x - 1)(\sec x - 2)}$.
5. Evaluate the limit: $\lim_{x \rightarrow -1} \frac{x^{2/9} - 1}{x + 1}$.

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