1. T/F 正確 (2)

14 知道要證明 $\lim_{x\to 0}\frac{f(x)-(x+2)}{x}=0$ (2~3)

寫出 $\left|\frac{f(x)-(x+2)}{x}\right| \le |x|^{0.1}|\ln|x||$ $(x\neq 0)$ (4)

解釋 $\lim_{x\to 0}|x|^{0.1}|\ln|x||=0$ (2)

$\lim_{x\to 0}\frac{f(x)-2}{x-0}=\lim_{x-0}\frac{f(x)-x-2}{x}$ (-3)

2. (b) f diff. at $x=0$ (2) Explain $\lim_{x\to 0}x^2\sin(\frac{1}{x})=0$ (2)

8 f' not diff. at $x=0$ (2) Formula of $f'(x)$ $(x\neq 0)$ (2~3)

Explain $\lim_{x\to 0}\cos(\frac{1}{x})$ does not exist (2)

5. 寫成 $\int_a^b f(x)\,dx$, but with wrong $f(x)$ (6)

6. $g'(x)=\frac{1}{2}\tan^2 x+2$ (5) (2) , $y(x)=\frac{3}{2}x+\frac{1}{2}\tan x+1$ (5) (2)

#4

送分 +14

~~$y'(x)>0$ +3~~

$y(0)=-1$, $y'(X)>1$ +7

from IVT+MVT => exactly 1 solution

#3.

(a.) (8分) 羅必達算錯 -2~-4

(b.) (8分) 拆成 $\frac{x}{\sin x}\cdot\frac{x}{\sin x}\cdot\frac{\cos\frac{1}{x}}{\frac{1}{x}}$ +4

$\frac{x}{\sin x}\to 1$ +2 $\frac{\cos\frac{1}{x}}{\frac{1}{x}}$ +2

#7.

(a.) 答案 -2 沒+C -2 u沒換回來 -2

(b.) 替換法正確 +2

替換後積分整理正確 +2

積分正確 +4