

習題集 3 簡答

(對應 [張旭微積分](#) 微分篇重點三：微分合成律 (連鎖律))

1. $4x \cdot 2^{2x^2+1} \ln 2.$

2. $66 \cos(66x+77).$

3. $2 \sin x \cos x \cos 3x - 3 \sin^2 x \sin 3x.$

4. $(2x-2) \sin(2x^2-4x+10).$

5. $-\tan x.$

6. $(\ln 2)(\ln 3)(\ln 4)4^x 3^{4^x} 2^{3^{4^x}}.$

7. $f'(x) = \begin{cases} \sin(\frac{1}{x}) - \frac{1}{x} \cos(\frac{1}{x}) & \text{if } x \neq 0 \\ \text{D.N.E.} & \text{if } x = 0 \end{cases}.$

8. $f'(x) = \begin{cases} 2x \sin(x^2) & \text{if } x > 0 \\ -2x \sin(x^2) & \text{if } x \leq 0 \end{cases}.$