習題集 $\boxed{3}$ 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. $f'(x) = \begin{cases} \sin(\dfrac{1}{x}) - \dfrac{1}{x}\cos(\dfrac{1}{x}) & \text{if } x \neq 0 \\ \text{D.N.E.} & \text{if } x = 0 \end{cases}$.

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