

F14106155 張言薰 HW8

第一題：

```
(ipcvdl) (base) iris@Yen-Hsun-2 F14106155_numerical_h
Library/CloudStorage/GoogleDrive-iriscdrive@gmail.com

=== (a) Degree 2 Polynomial ===
y ≈ 6.691 x^2 + (-1.884)x + 3.086
error: 0.005

=== (b) Exponential Model ===
a = 0.398, b = 21.445
y ≈ 21.445 * e^ 0.398x
error: 94.983

=== (c) Power Model ===
n = 2.020, b = 6.239
y ≈ 6.239 * x^ 2.020
error: 0.012
```

第二題：

```
(ipcvdl) (base) iris@Yen-Hsun-2 F14106155_numerical_h
Library/CloudStorage/GoogleDrive-iriscdrive@gmail.com

a0 = 0.498, a1 = 0.327, a2 = -0.233
P2(x) = 0.498 + 0.327x + (-0.233)x^2
```

第三題：

```
(ipcvdl) (base) iris@Yen-Hsun-2 F14106155_numerica
Library/CloudStorage/GoogleDrive-iriscdrive@gmail.

=== (a) S_4(x) coefficients ===
a_0 = 0.459
a_1 = -0.147
b_1 = 0.232

a_2 = 0.055
b_2 = -0.125

a_3 = -0.039
b_3 = 0.083

=== (b) ∫_0^1 S4(x)dx ===
∫_0^1 S4(x)dx = 0.230

=== (c) ∫_0^1 x^2 sin(x)dx ===
∫_0^1 x^2 sin(x)dx = 0.223

=== (d) Error E(S4) ===
Error = 0.553
```