Q1

```
@PYH530 →/workspaces/numerical-method_hw3 (main) $ /home/codespace/
.python/current/bin/python /workspaces/numerical-method_hw3/hw4_1.py
梯形法則結果: 0.396148
辛普森法結果: 0.385664
中點法結果: 0.380805
精確值結果: 0.385936
```

Q2

```
@PYH530 →/workspaces/numerical-method_hw3 (main) $ /home/codespa
.python/current/bin/python /workspaces/numerical-method_hw3/hw4_2
精確值: 0.1922593577
高斯求積 (n=3): 0.1922593773
高斯求積 (n=4): 0.1922593578
```

Q3

方法	结果值	
误差		
理论精确值	0.785398163397448	
Scipy	0.511844635310913	2.74e-01
Simpson 4x4	0.511987544012125	2.73e-01
Gauss 3x3	0.511865539945296	2.74e-01

Q4

```
@PYH530 →/workspaces/numerical-method_hw3 (main) $ /home/codespace/
.python/current/bin/python /workspaces/numerical-method_hw3/hw4_4.py
Part a approximation (n=4): 0.524591
Part a exact value: 0.528408
Part a error: 3.82e-03

Part b approximation (n=4): 0.274482
Part b exact value: 0.286530
Part b error: 1.20e-02
```