

一、回答下列問題(40%)

1. (4%) 當我們 import 外部模組(module)時，下列兩種寫法有哪裡不一樣？

```
import turtle
from turtle import *
```

2. (6%) 敘述你如何將 Year=1965, Model=Cherokee, Color=Gold 加入到一個 dictionary 的資料型態內？

3. (4%) 請問下列程式繪畫出什麼圖形？_____

```
from turtle import *
t = Turtle()
screen = t.getscreen()
for i in range(5):
    t.forward(25)
    t.left(60)
t.forward(25)
screen.exitonclick()
```

4. (6%) 何謂遞迴函式(recursive function)，寫一個函式說明。

5. (4%) 請問下面這兩行代表程式執行什麼？

```
if __name__ == "__main__":
    main()
```

6. (8%) 下面定義函式中*args 與**dimensions 代表的意義是？

```
def drawFigure(turtle, *args):
def drawRectangle(turtle, **dimensions):
```

7. (8%) 請問下列參數傳遞到 drawSquare 函式內，length 變數的值為多少？

```
def drawSquare(turtle, length=20):
    turtle.forward(length)
t = turtle.Turtle()
screen = t.getscreen()
drawSquare(t, 40) #length=_____
drawSquare(t) #length=_____
drawSquare(50) #length=_____
drawSquare(length=30, turtle=t) # length=_____
screen.exitonclick()
```

二、程式寫作(60%)

8. (15%) Write a function called `isPalindrome` that returns `True` if a string given to it is a palindrome. A palindrome is a string that is the same spelled backwards or forwards. For instance, `radar` is a palindrome. Use the function in a program and test your code on several different values.
9. (15%) Write a function called `factors` that given an integer returns the list of the factors of that integer. For instance, `factors(6)` would return `[1, 2, 3, 6]`.
10. (15%) Write a function called `dotProduct` that computes the dot product of two lists of numbers given to the function.
11. (15%) 下列三題任選一題：(a) 畫出函數圖形 $f(x) = \sin(x)/x$ ， x 軸的範圍從 -10 到 +10。(b) 當抓取 xml 檔案時，其中一項 `timeList0="2008-10-28T20:13:40Z"`，請問如何將它轉換成日期/時間格式？(提示：可以利用 `datetime` 模組)。(c) 將第 3 題的程式修改，要求使用者輸入放大倍率，然後畫出放大後的圖形。