%% %7.1

pretty(6, '$') %Type it in the command window得 $$$$$$

% Function file pretty.m

function pretty(n, ch)

line = char(double(ch)\*ones(1,n));%char 將ASCII碼轉回字串形式

disp(line)

%% %7.2

newquot(1) %Type it in the command window

% Function file f.m

function y=f(x)

y=x^3;

% Function file newquot.m

function newquot(x)

h = 1;

for i = 1 : 10

df = (f(x + h) - f(x)) / h;

disp( [h, df] );

h = h / 10;

end

%Type the following three statements in the command window

fn = @f;

x = 2;

newquot\_handel(fn,x)

%Using function handels to pass the function as the input parameter.

% another example

fn = @sin; % sine function

x=0.3;

newquot\_handel(fn,x) % derivative of sin(0.3) = cos(0.3) = 0.9553

% Function file newquot\_handel.m

function newquot\_handel(fn,x)

h = 1;

for i = 1 : 10

df = (feval(fn, x + h) - feval(fn, x)) / h;

disp( [h, df] );

h = h / 10;

end

%% %7.3

y = double(3)% Type it in the command window得 y=6

% Function file double.m

function y = double(x)

y = x \* 2;

%% %7.4

[xout, yout] = swop(4, 5);% Type it in the command window, [xout, yout]=[5 4]

% Function file swop.m

function [xout, yout] = swop(x, y)

xout = y;

yout = x;

%% %7.5

ex=exponential(2)

%Type it in the command window, 得 ex=6.3891

exp(2) % Matlab built-in function

% Function file exponential.m

function ex=exponential(x)

y=1; i=1; z=1;

while z>=10^-6

z=x^i/factorial(i);%factorial階乘

i=i+1;

y=y+z;

end

ex=y;

%% %7.6

% Script file

for i = 0 : 0.1 : 4

disp( [i, phi(i)] );

end

% Function file phi.m

function y = phi(x)

a = 0.4361836;

b = -0.1201676;

c = 0.937298;

r = exp(-0.5 \* x ^2) / sqrt(2 \* pi);

t = 1 / (1 + 0.3326 \* x);

y = 0.5 - r \* (a \* t + b \* t ^2+ c \* t ^ 3);

%% %7.7

[x1, x2, flag] = quad( 0.5, -1, 2)% 得[x1, x2, flag]=[0.5000 -1.0000 2.0000]

% Function file quad.m

function [x1, x2, flag] = quad( a, b, c )

if a==0 & b==0 & c==0

flag = 99; x1=0; x2 = 0;

elseif a==0 & b==0

flag = 0; x1=NaN; x2 = NaN;

elseif a==0

flag = 1;

x1 = -c/b;

x2 = NaN;

else

x1 = (-b + sqrt(b^2 - 4\*a\*c))/(2\*a);

x2 = (-b - sqrt(b^2 - 4\*a\*c))/(2\*a);

flag = 2;

end

%% %7.8

% Type the following four statements in the command windpow

y = zeros(1,12);

for k = 1:12

y(k)=f(k);

end

display(y);

% Function file f.m

% Function file f.m

function y = f(n)

if n > 2

y = f(n - 1) + f(n - 2);

else

y = 1;

end