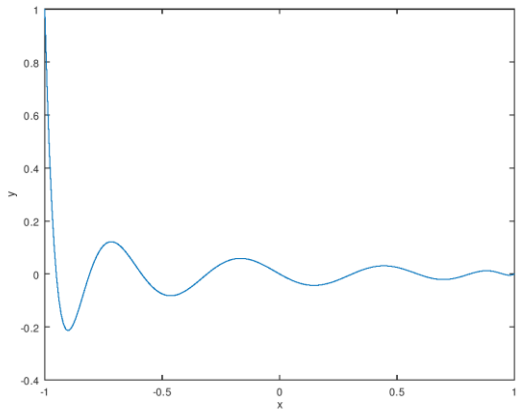
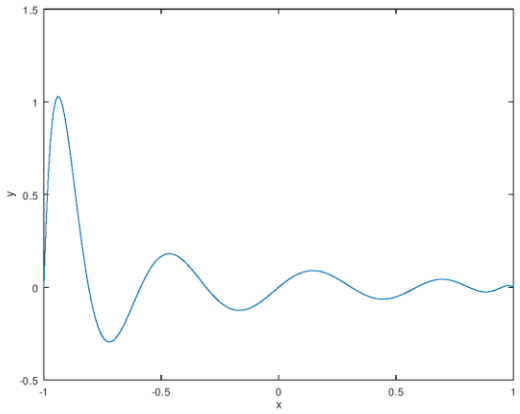
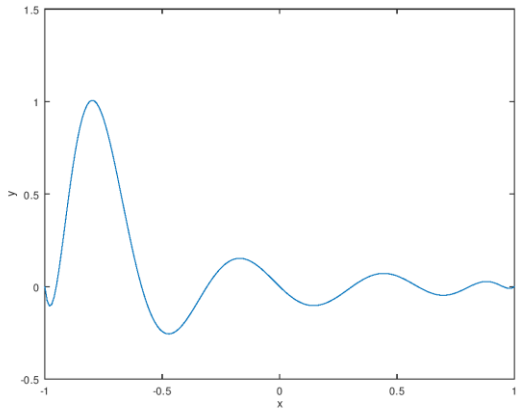
A.1

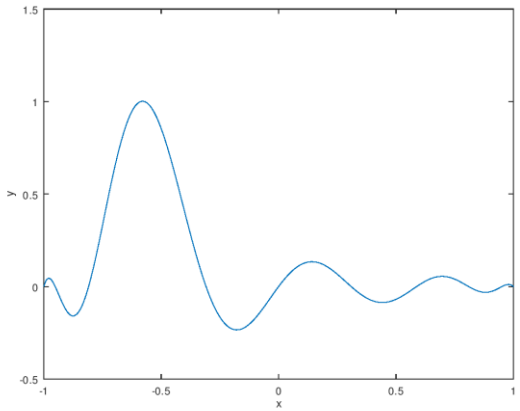
```
x=[-1:0.01:1];
x0=[-1:0.2:1];
n=size(x0,2);
for i=1:n
p=1;
for j=1:n
if j==i
continue;
endif;
p=p.*(x-x0(j))/(x0(i)-x0(j));
figure(i)
plot(x,p);
xlabel('x')
ylabel('y')
endfor;
endfor;
```

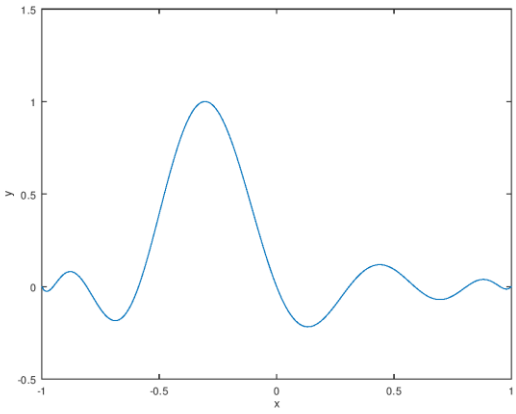
圖從左至右依序為 x0,x1,…,x10

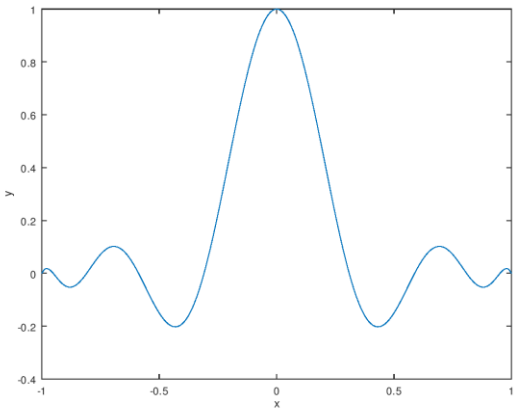


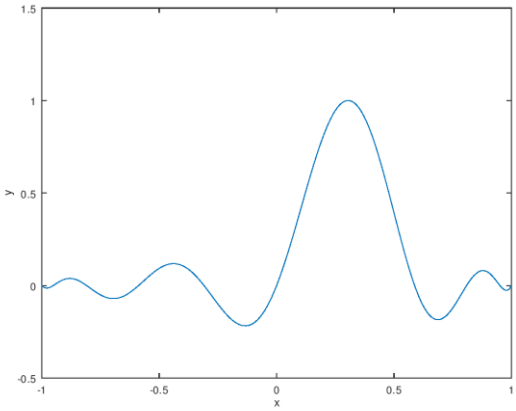


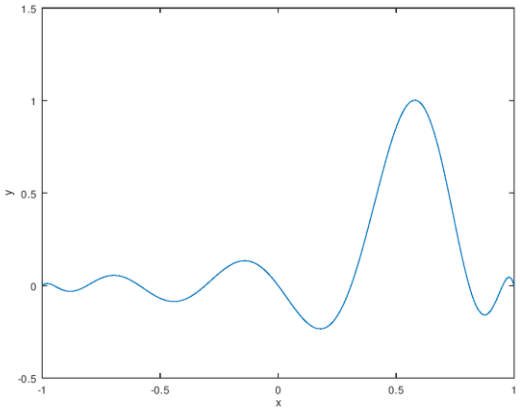


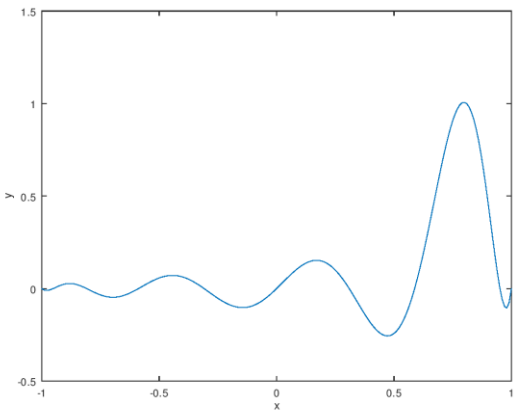


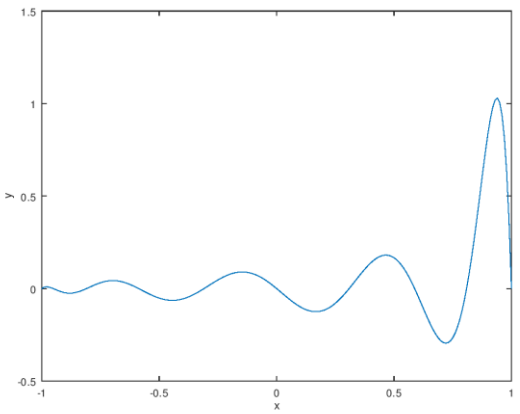

1.5
1
0.5
0
-0.5
y
-1
-0.5
0
0.5
1
x

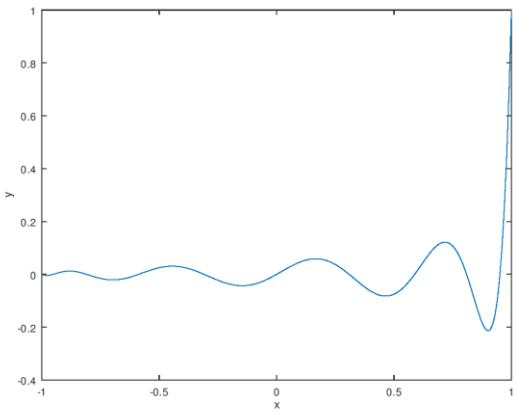

1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
y
-1
-0.5
0
0.5
1
x


1.5
1
0.5
0
-0.5
y
-1
-0.5
0
0.5
1
x


1.5
1
0.5
0
-0.5
y
-1
-0.5
0
0.5
1
x


1.5
1
0.5
0
-0.5
y
-1
-0.5
0
0.5
1
x


1.5
1
0.5
0
-0.5
y
-1
-0.5
0
0.5
1
x


1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
y
-1
-0.5
0
0.5
1
x

A.2

```
function y=LagrangePol(x,pointx,pointy)
n=size(pointx,2);
L=ones(n,size(x,2));
for i=1:n
for j=1:n
if (i~=j)
L(i,:)=L(i,:).*(x-pointx(j))/(pointx(i)-pointx(j));
end
end
end
y=0;
for i=1:n
y=y+pointy(i)*L(i,:);
end
end
x=[-1 -0.8 -0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1];
y=[0.0385 0.0588 0.1 0.2 0.5 1 0.5 0.2 0.1 0.0588 0.0385];
plot(x,y,"o","markersize",5)
hold on;
t=[-1:0.01:1];
plot(t,LagrangePol(t,x,y))
xlabel('x')
ylabel('y')
print -dpng partA_2.png
```