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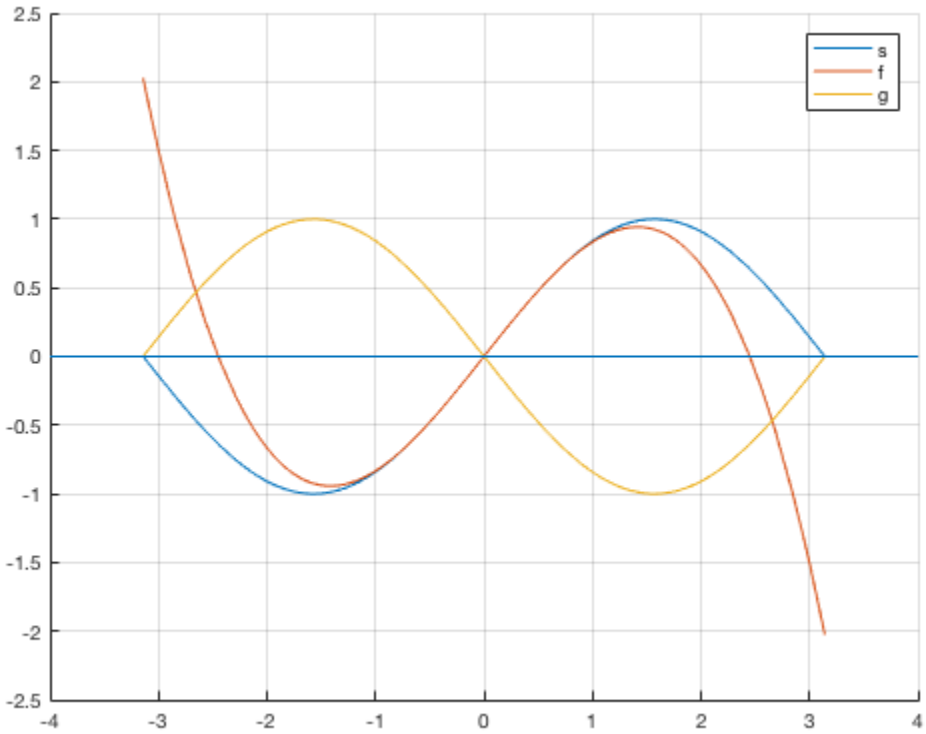
Question 1 part a

```
s= @(x) sin(x);
f=@(x) -(1/6).*x.^3+x;
g=@(x) -sin(x);
hold on
fplot(s,[-pi,pi])
fplot(f,[-pi,pi])
fplot(g,[-pi,pi])
refline(0,0)
grid on
legend ('s','f','g')
hold off
```



Question 1 part b

```
h=@(x) abs(s-f);
l=@(x) abs(s-g);
j=@(x) s-f;
k=@(x) s-g;
a=integral(h,-pi,pi);
b=integral(l,-pi,pi);
c=integral(j,-pi,pi);
d=integral(k,-pi,pi);

Undefined function 'minus' for input arguments of type
 'function_handle'.

Error in CalcLab2>@(x)abs(s-f)

Error in integralCalc/iterateScalarValued (line 314)
                fx = FUN(t);

Error in integralCalc/vadapt (line 132)
            [q,errbnd] = iterateScalarValued(u,tinterval,pathlen);

Error in integralCalc (line 75)
        [q,errbnd] = vadapt(@AtoBInvTransform,interval);

Error in integral (line 88)
Q = integralCalc(fun,a,b,opstruct);

Error in CalcLab2 (line 18)
a=integral(h,-pi,pi);
```

Question 2

```
clc
s= @(x) sin(x);
b=@(x) ((16.*x.*(pi-x))./((5.*pi.^2)-4.*x.*(pi-x)));
sb=@(x) sin(x)-((16.*x.*(pi-x))./((5.*pi.^2)-4.*x.*(pi-x)));
c=@(x) sin(x)-((16.*x.*(pi-x))./((7.*pi.^2)-4.*x.*(pi-x)));
MIO=integral(sb,0,pi);
MIU=integral(sb,-pi,0);
MOU=integral(c,-pi,0);
c1=sin(-pi/6);
c2=c(-pi/6);
Ex=abs(c1-c2);
d1=sin(-pi/3);
d2=c(-pi/3);
Ex=abs(d1-d2);
```

Question 3

```
s= @(x) sin(x);
f=@(x) -(1/6).*x.^3+x;
```

```
hold on
fplot(s,[-pi,pi])
fplot(f,[-pi,pi])
refline(0,0)
grid on
legend ('s','f')
hold off
h=@(x) s(x)-f(x);
JUI=integral(h,(-pi)/4,0);
```

Question 4

```
s= @(x) sin(x);
L=@(x) 2.*x./pi;
SL=@(x) sin(x)- 2.*x./pi;
ANSmiddle=integral(SL,0,1/2*pi);
ANSfinal=ANSmiddle*4
```

Published with MATLAB® R2017b