Name: KULVIR SINGH **Registration Number: 19BCE2074**

Question 1

Editor - untitled*

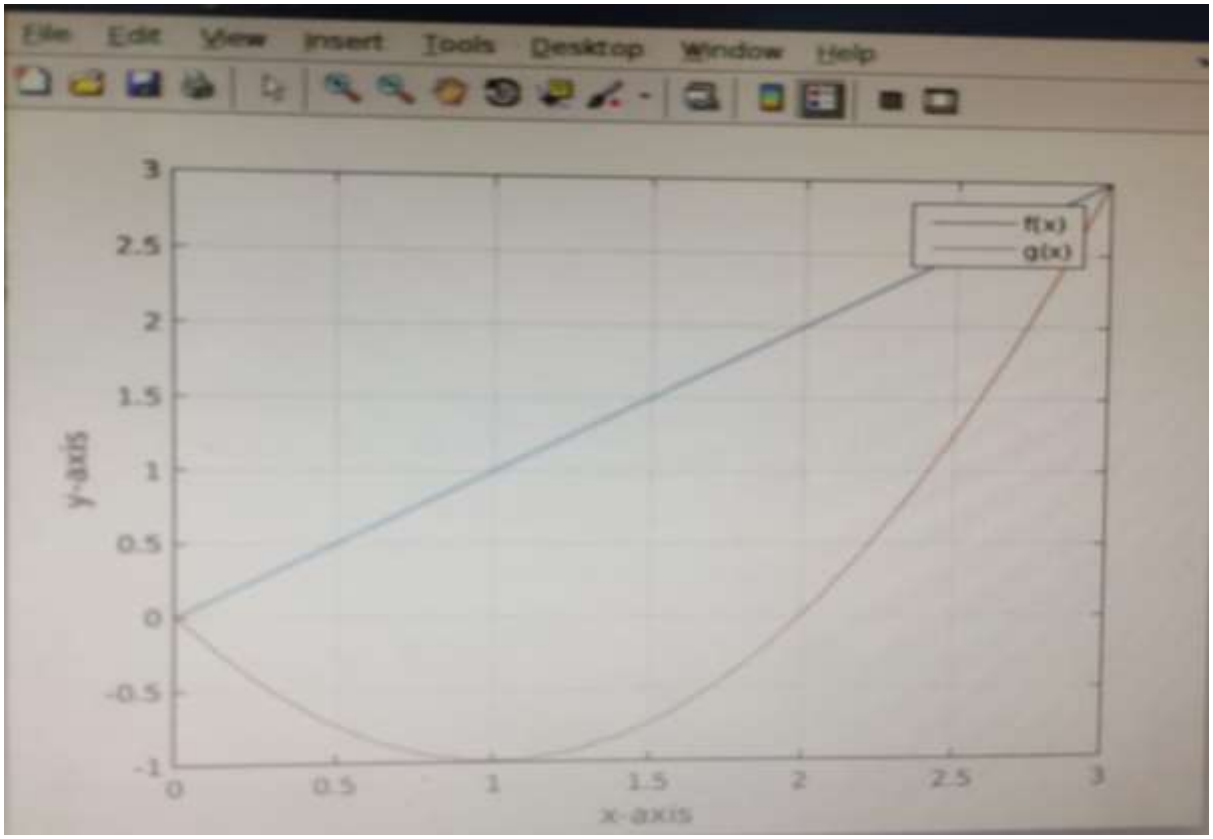
untitled*

```
1   clear all
2   clc
3   syms x
4   f=input('Enter the upper curve f(x): ');
5   g=input('Enter the lower curve g(x): ');
6   L=input('Enter the limits of integration for x [a,b]:');
7   a=L(1); b=L(2);
8   Area=int(f-g,x,a,b);
9   disp(['Area bounded by the curves f(x) and g(x) is: ',char(Area)]);
10  x1=linspace(a,b,20);y1=subs(f,x,x1);
11  x2=x1;y2=subs(g,x,x1);
12  plot(x1,y1);hold on; plot(x2,y2);hold off;
13  xlabel('x-axis');ylabel('y-axis');
14  legend('f(x)','g(x)');grid on;
```

Command Window

New to MATLAB? See resources for Getting Started.

```
Enter the upper curve f(x): x
Enter the lower curve g(x): x^2-2*x
Enter the limits of integration for x [a,b]:[0 3]
Area bounded by the curves f(x) and g(x) is: 9/2
fx >>
```

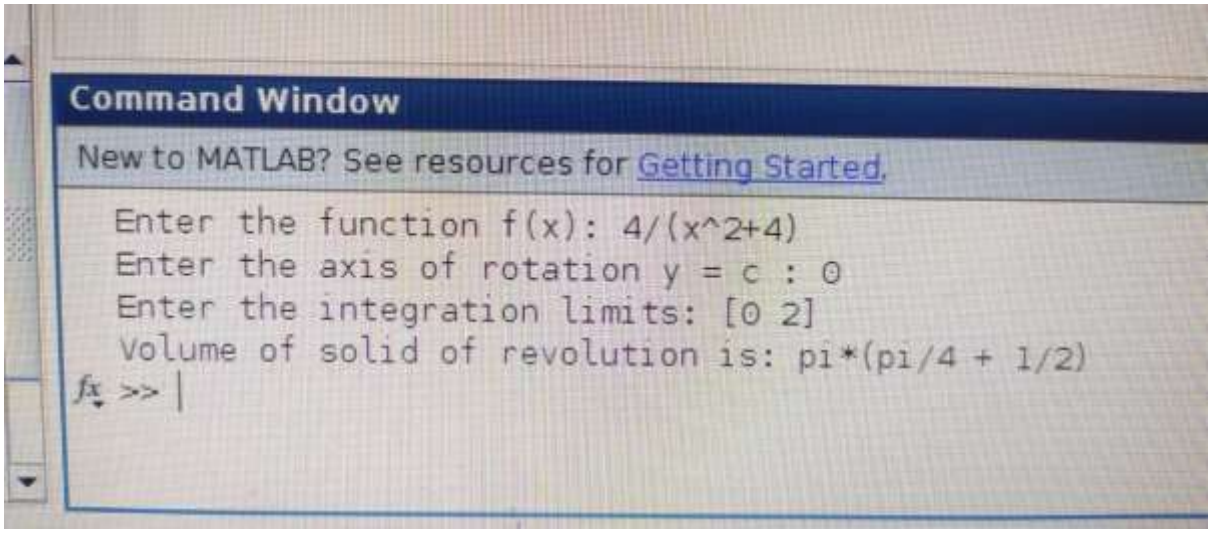


Question 2

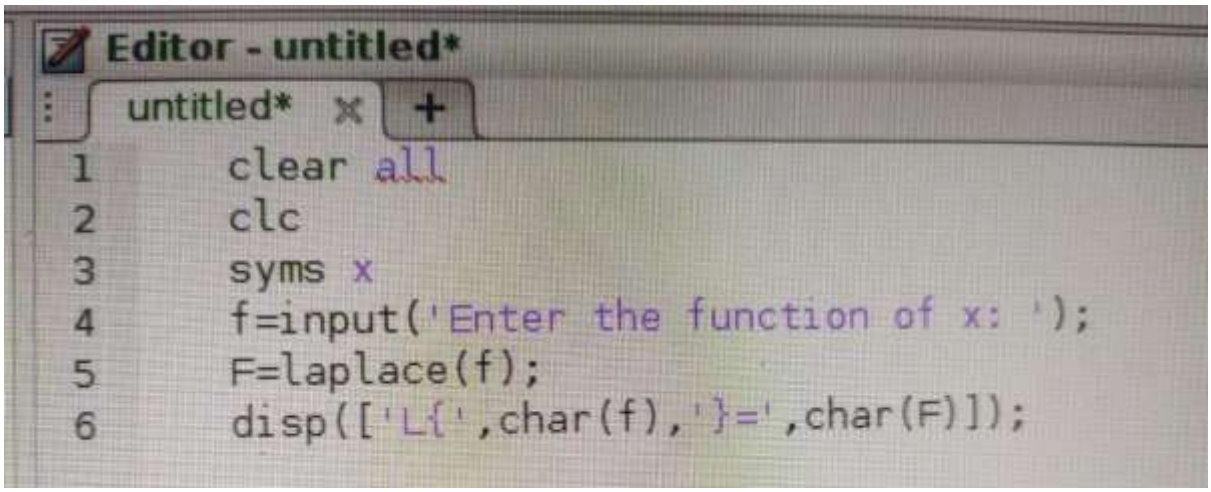
Editor - untitled*

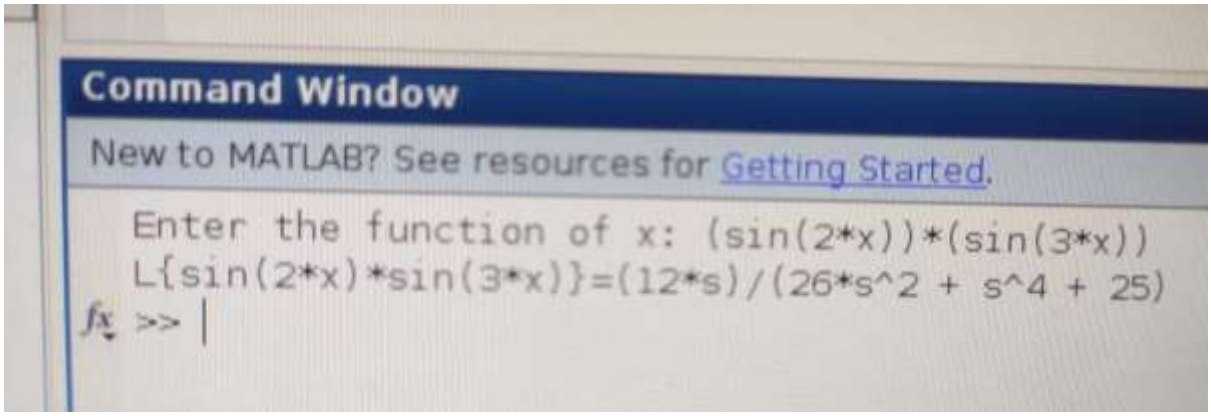
untitled*

```
clc
syms x
f=input('Enter the function f(x): ');
c=input('Enter the axis of rotation y = c : ');
iL=input('Enter the integration limits: ');
a=iL(1);b=iL(2);
vol=pi*int((f-c)^2,a,b);
disp(['Volume of solid of revolution is: ',char(vol)]);
x1=linspace(a-5,b-5,20); y1=subs(f,x,x1);
x2=x1; y2=c*ones(length(x1));
plot(x1,y1);hold on;
plot(x2,y2);hold off;
xlabel('x-axis');ylabel('y-axis')
legend('The curve y=f(x)','The axis of revolution y=c');
grid on;
```


Command Window
New to MATLAB? See resources for Getting Started.
Enter the function f(x): 4/(x^2+4)
Enter the axis of rotation y = c : 0
Enter the integration limits: [0 2]
Volume of solid of revolution is: pi*(pi/4 + 1/2)
fx >>

Question 3


Editor - untitled*
untitled*
1 clear all
2 clc
3 syms x
4 f=input('Enter the function of x: ');
5 F=laplace(f);
6 disp(['L{',char(f),'}=',char(F)]);


Command Window
New to MATLAB? See resources for Getting Started.
Enter the function of x: (sin(2*x))*(sin(3*x))
L{sin(2*x)*sin(3*x)}=(12*s)/(26*s^2 + s^4 + 25)
fx >>

Question 4

Editor - untitled*

untitled*

```
1    clear all
2    clc
3    syms s
4    f=input('Enter the function of s: ');
5    F=ilaplace(f);
6    disp(['L^-1{',char(f),'}=',char(F)]);
```