

1)

>> a = [0:0.1:2*pi]

a =

Columns 1 through 9:

0.00000 0.10000 0.20000 0.30000 0.40000 0.50000 0.60000 0.70000 0.80000

Columns 10 through 18:

0.90000 1.00000 1.10000 1.20000 1.30000 1.40000 1.50000 1.60000 1.70000

Columns 19 through 27:

1.80000 1.90000 2.00000 2.10000 2.20000 2.30000 2.40000 2.50000 2.60000

Columns 28 through 36:

2.70000 2.80000 2.90000 3.00000 3.10000 3.20000 3.30000 3.40000 3.50000

Columns 37 through 45:

3.60000 3.70000 3.80000 3.90000 4.00000 4.10000 4.20000 4.30000 4.40000

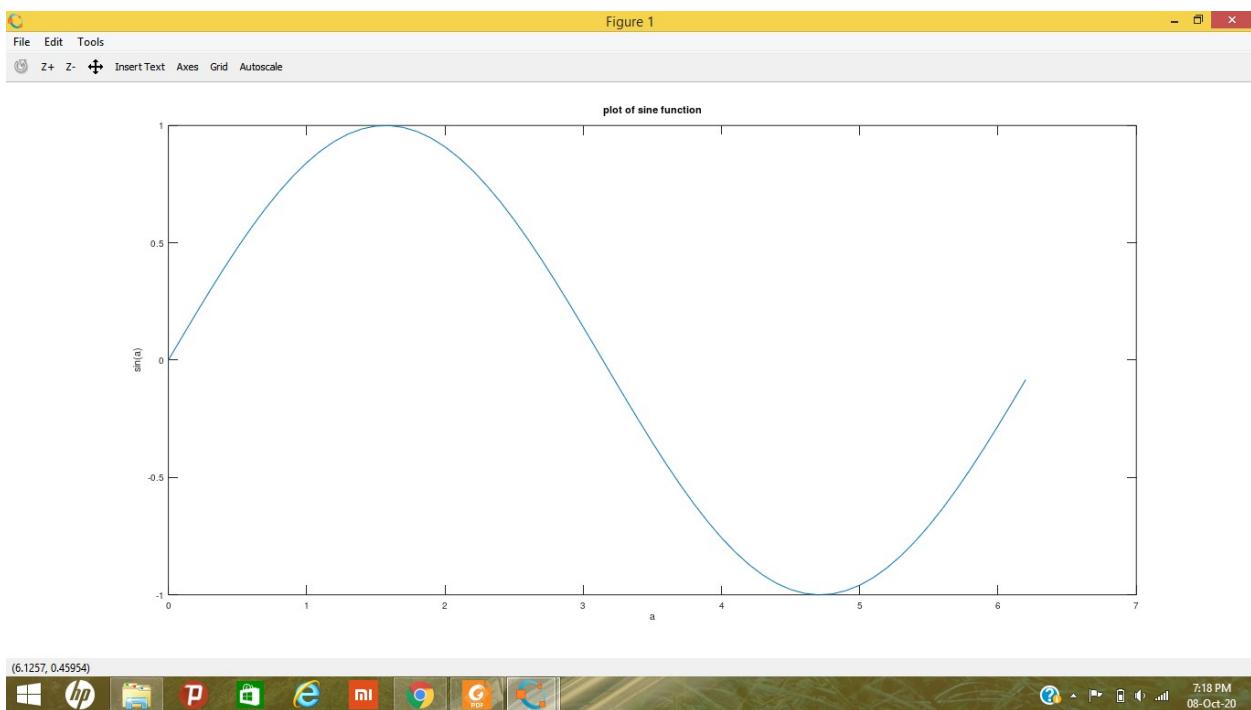
Columns 46 through 54:

4.50000 4.60000 4.70000 4.80000 4.90000 5.00000 5.10000 5.20000 5.30000

Columns 55 through 63:

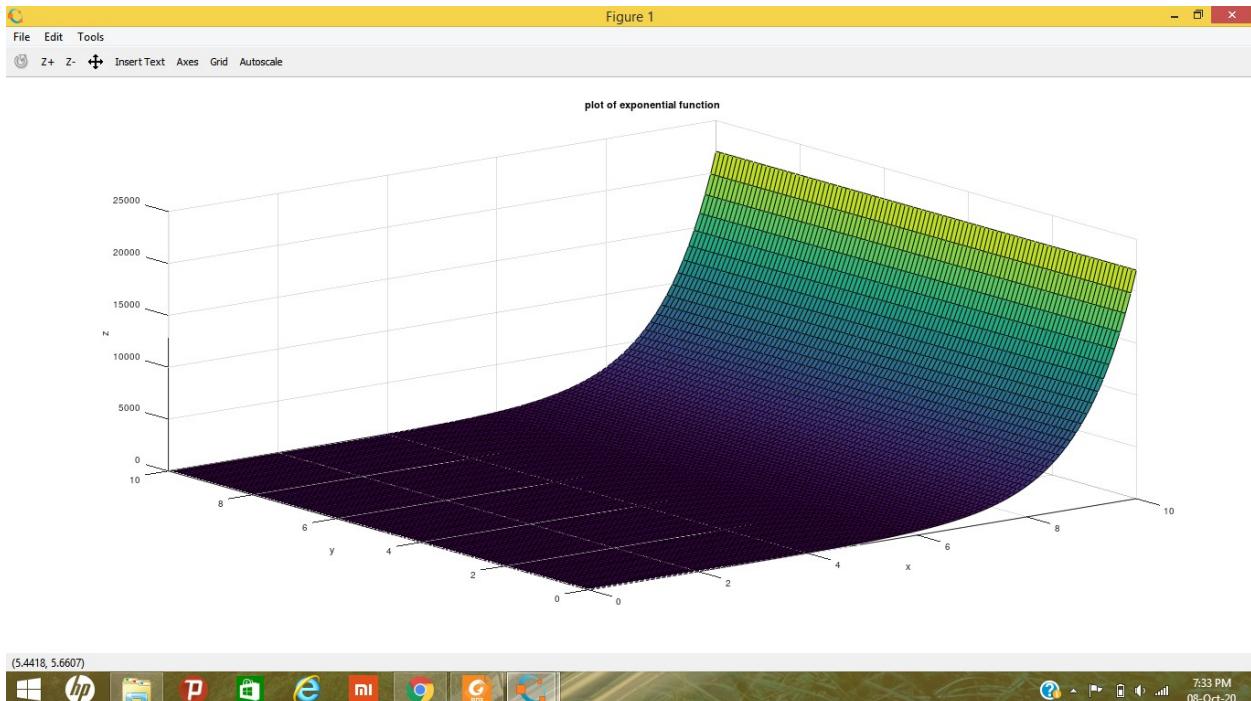
5.40000 5.50000 5.60000 5.70000 5.80000 5.90000 6.00000 6.10000 6.20000

```
>> b = sin(a);
>> plot(a,b)
>> xlabel('a');
>> ylabel('sin(a)');
>> title('plot of sine function');
```



2)

```
[x,y] = meshgrid(0:0.1:10); % x,y, and z axis coordinates  
>> z = exp(x); % z axis as a exponential function of x  
>> surf(x,y,z)  
>> xlabel('x');  
>> ylabel('y');  
>> zlabel('z');  
>> title('plot of exponential function');
```



3)

If statement

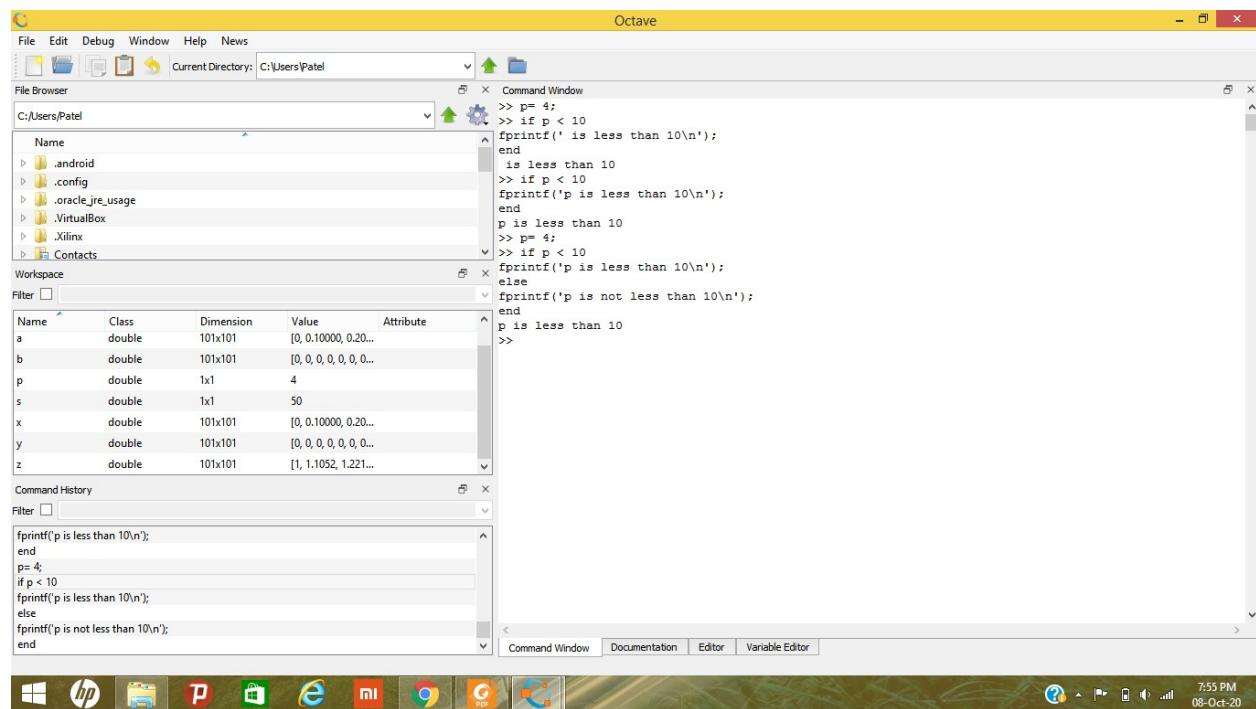
```
>> p= 4;  
>> if p < 10  
fprintf('p is less than 10\n');  
end  
p is less than 10
```

If-else statement

```

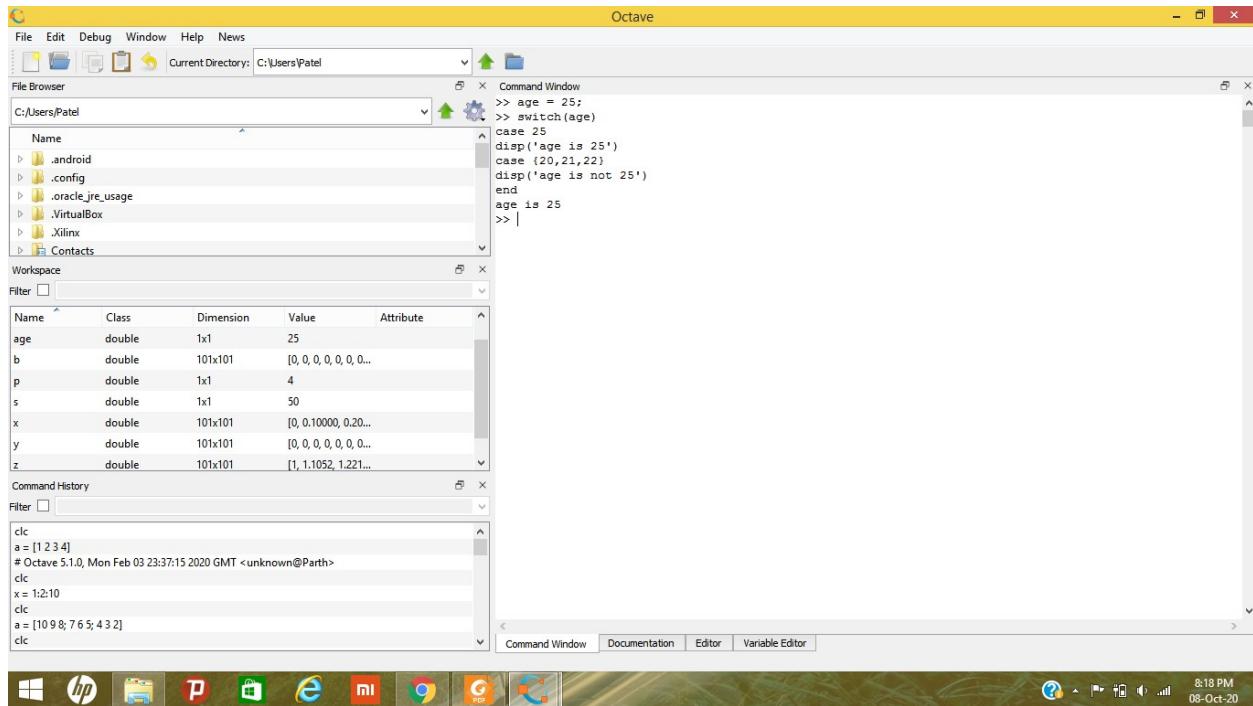
>> p= 4;
>> if p < 10
fprintf('p is less than 10\n');
else
fprintf('p is not less than 10\n');
end
p is less than 10
>>

```



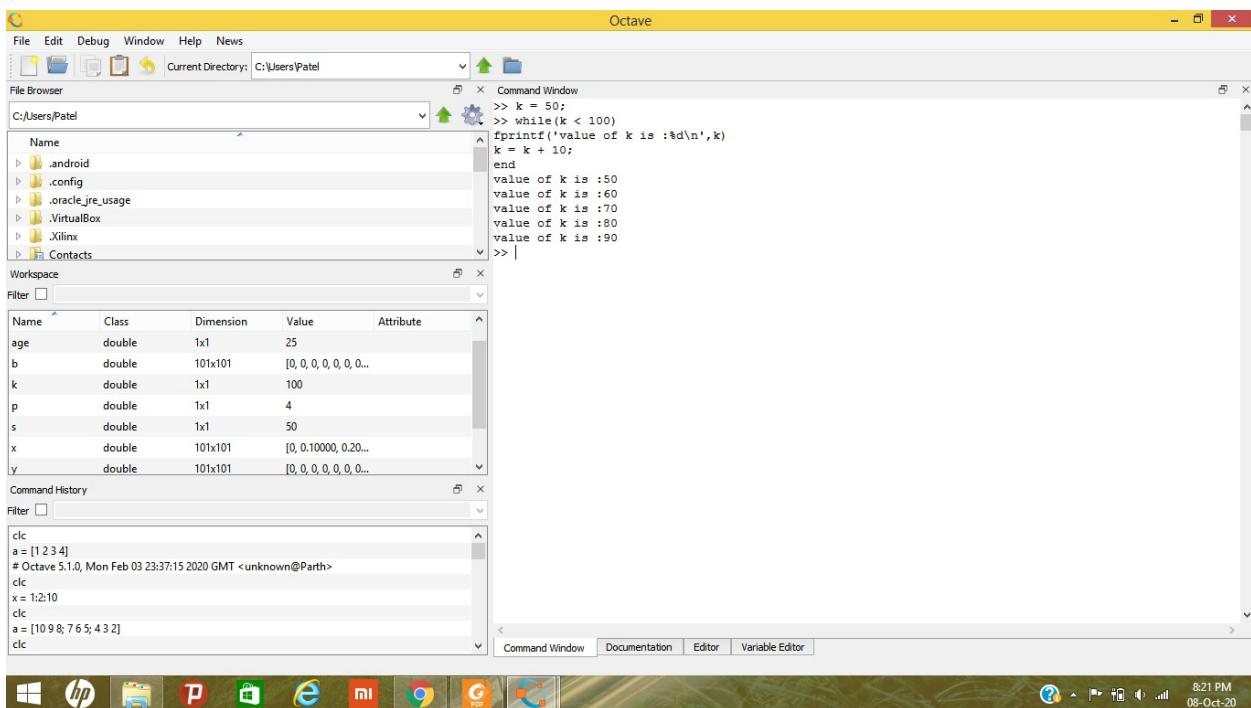
4)

```
>> age = 25;
>> switch(age)
case 25
disp('age is 25')
case {20,21,22}
disp('age is not 25')
end
age is 25
>>
```



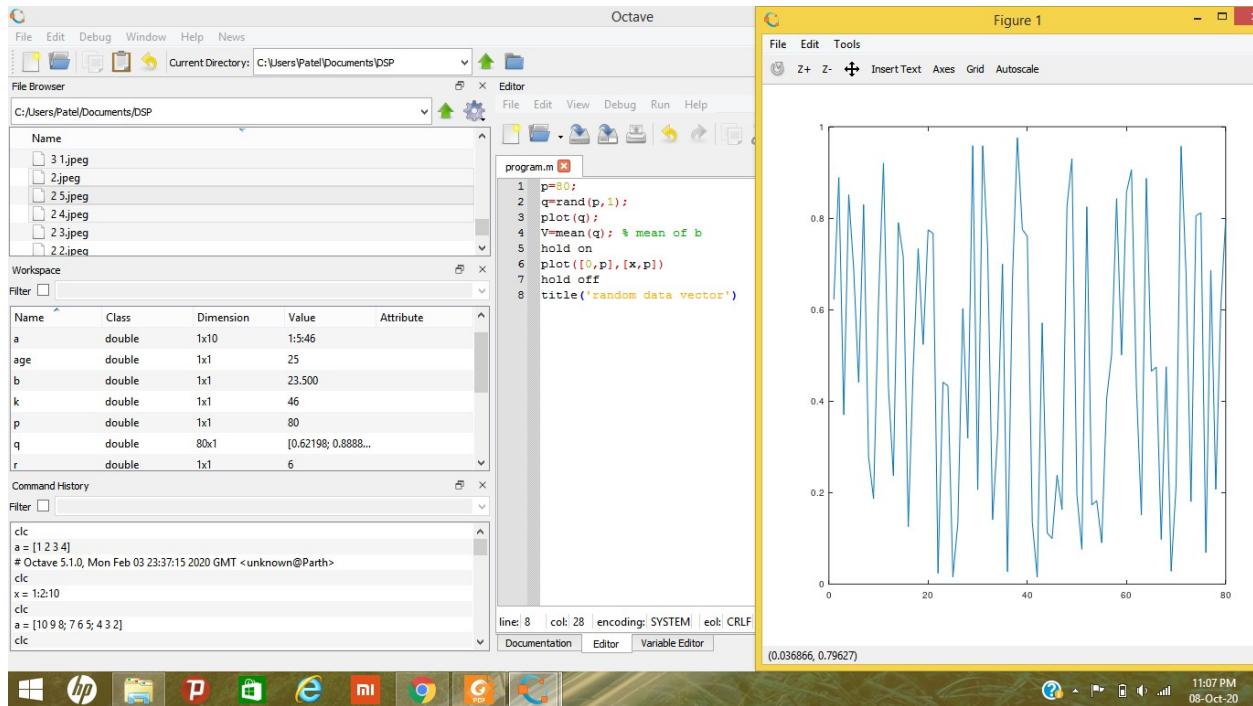
5)

```
>> k = 50;  
>> while(k < 100)  
fprintf('value of k is :%d\n',k)  
k = k + 10;  
end  
value of k is :50  
value of k is :60  
value of k is :70  
value of k is :80  
value of k is :90  
>>
```



6)

```
p=80; % creating a random value as 80
q=rand(p,1); % random vector generator
plot(q);
V=mean(q); % mean of b
hold on
plot([0,p],[x,p])
hold off
title('random data vector')
```



7)

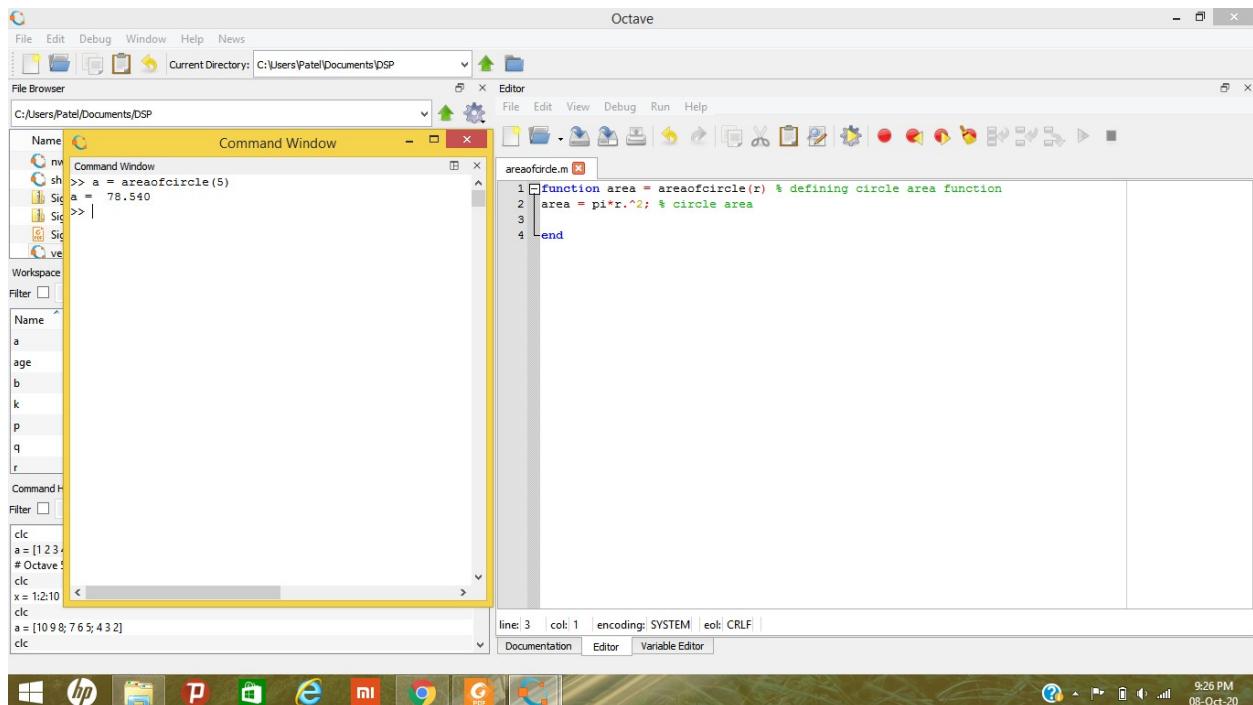
```
function F1= enter(n) % user defined func
syms k x
F1 = symsum(k*sin(k*x),k,1,n)
```

The screenshot shows the Octave Online interface. On the left, there's a file browser window titled "enter.m" with the code provided above. To its right is a code editor window with the same code. Below these is a "RUN" button and a "Vars" panel showing "Sans". At the bottom, the terminal output shows the result of running the function with n=6:

```
octave:6> enter(6)
F1 = (sym) sin(x) + 2·sin(2·x) + 3·sin(3·x) + 4·sin(4·x) + 5·sin(5·x) + 6·sin(6·x)
ans = (sym) sin(x) + 2·sin(2·x) + 3·sin(3·x) + 4·sin(4·x) + 5·sin(5·x) + 6·sin(6·x)
```

8)

```
function area = areaofcircle(r) % user defined function  
area = pi*r.^2; % circle area  
  
end
```



9)

```
a=1:5:50;
b=mean(a);
for k=1:5:50
if (k<b)
fprintf ('%d < %d\n',k,b);
else if
isequal(k,z)
fprintf('%d = %d\n',k,b);
else
fprintf('%d > %d\n',k,b);
end
end
end
```

