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ELEN 50 Lab

22 September 2020

Wednesday 2:15PM

Lab 0: Introduction to MATLAB

Part C:

Procedure:

```
>> 1.5*7
ans =
   10.5000
>> 53.6/7
ans =
    7.6571
>> (3*15+8*9)/11
ans =
   10.6364
>> (3*15+8*19)/11
ans =
   17.9091
```

Work to be Submitted:

```
>> (3.7*4+3*5+2.3*3)/(4+5+3)
ans =
    3.0583
```

Part D:

Procedure:

1.

```
>> exp(0)
ans =
     1
>> exp(-1)
ans =
    0.3679
>> exp(-5)
ans =
    0.0067
>> exp([0,-1,-2,-3,-4,-5])
ans =
    1.0000    0.3679    0.1353    0.0498    0.0183    0.0067
>> t=[0,-1,-2,-3,-4,-5]
t =
     0    -1    -2    -3    -4    -5
>> exp(t)
ans =
    1.0000    0.3679    0.1353    0.0498    0.0183    0.0067
```

2.

```
>> a=pi*[0:5]

a =

         0    3.1416    6.2832    9.4248   12.5664   15.7080

>> cos(a)

ans =

     1    -1     1    -1     1    -1

>> a=pi*0.5*[0:5]

a =

         0    1.5708    3.1416    4.7124    6.2832    7.8540

>> cos(a)

ans =

    1.0000    0.0000   -1.0000   -0.0000    1.0000    0.0000
```

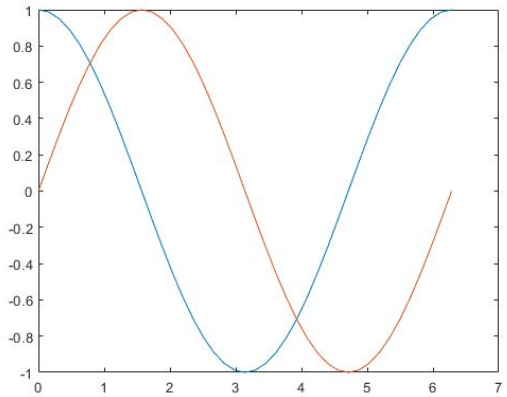
Work to be Submitted:

```
>> a=pi*(1/20)*[0:19]

a =

  Columns 1 through 17

         0    0.1571    0.3142    0.4712    0.6283    0.7854    0.9425    1.0996    1.2566    1.4137    1.5708    1.7279    1.8850    2.0420    2.1991    2.3562    2.5133

  Columns 18 through 20

    2.6704    2.8274    2.9845

>> cos(a)

ans =

  Columns 1 through 17

    1.0000    0.9877    0.9511    0.8910    0.8090    0.7071    0.5878    0.4540    0.3090    0.1564    0.0000   -0.1564   -0.3090   -0.4540   -0.5878   -0.7071   -0.8090

  Columns 18 through 20

   -0.8910   -0.9511   -0.9877

>>
```

Procedure:

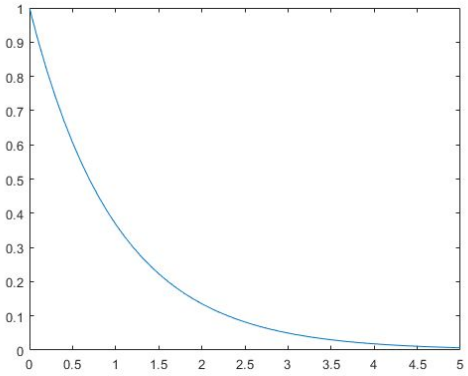
3.

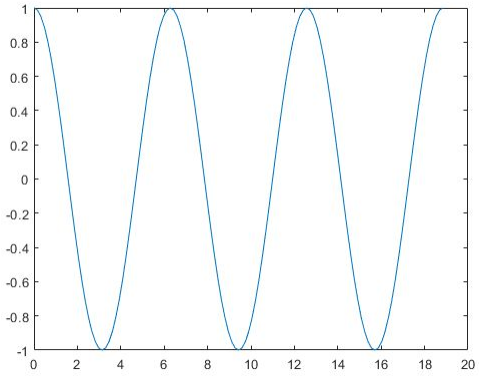
```
>> al=pi*0.05*[0:40];
>> plot(al,cos(al),al,sin(al))
```



Work to be Submitted:

```
>> t = 0:0.1:5;
>> plot (t,exp(-t))
>> a = 0:0.05*pi:6*pi;
>> plot (a,cos(a))
>>
```





Part E:

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FILE NAVIGATE EDIT

ELEN50Lab0.m ELEN50Lab01.m

```
1 -    Is1 = 6e-3;
2 -    Is2 = 3e-3;
3 -    R1 = 6e3;
4 -    R2 = 2e3;
5 -    R3 = 3e3;
6 -    Vab = (Is1 - Is2)/(1/R1 + 3/R2 + 1/R2 + 1/R3)
```

```
>> ELEN50Lab0

Vab =

    1.2000
```

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FILE NAVIGATE

ELEN50Lab0.m ELEN50Lab01.m

```
1 -    Vs1 = 6;
2 -    Is = 2e-3;
3 -    Vo = 4;
4 -    R1 = 3e3;
5 -    R2 = 2e3;
6 -    R3 = 3e3;
7 -    R4 = 12e3;
8 -    R5 = 1e3;
9
10 -   IR5 = Vo/R5
11 -   IR1 = -Is + IR5;
12 -   Vad = -Vs1 + R1*IR1 + R2*IR5 + Vo;
13 -   IR3 = -Vad/R4 + Is - IR5;
14 -   Vs = -R3*IR3 + Vad
15
```

```
>> ELEN50Lab01

IR5 =

    0.0040


Vs =

    21
```