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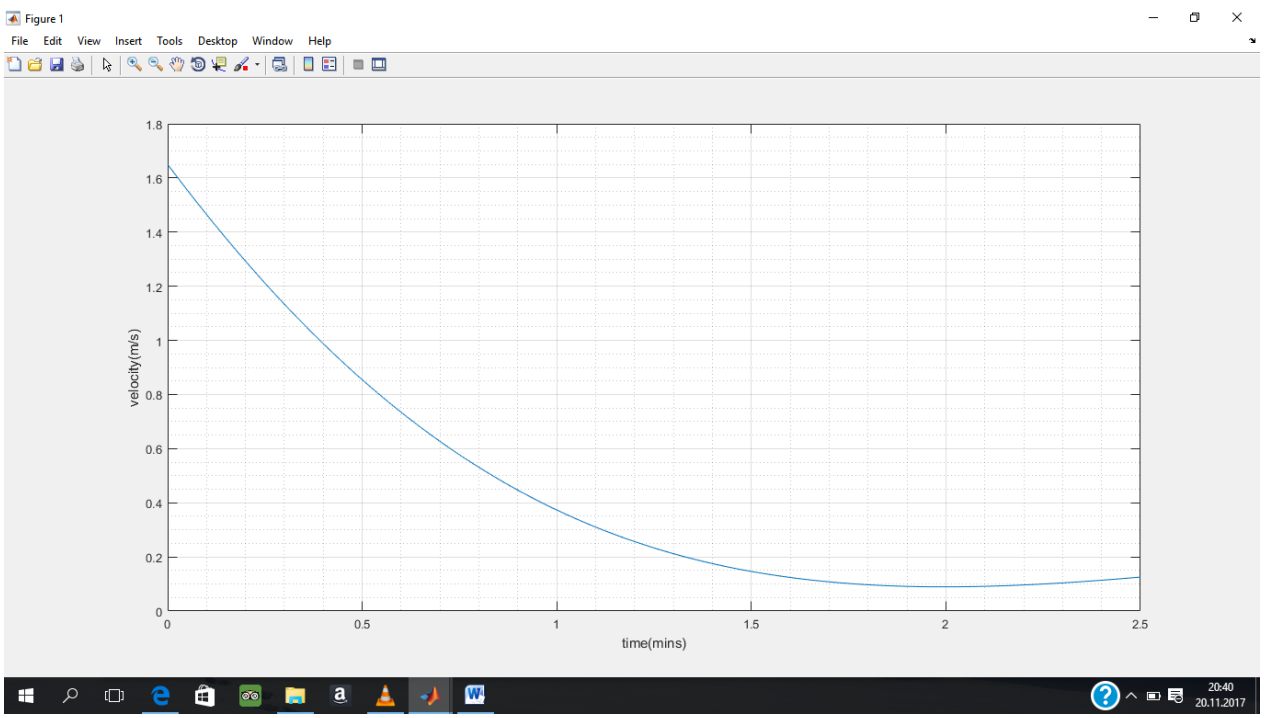
MATRIC; 16/ENG06/057
MECHANICAL ENGR.
TEST

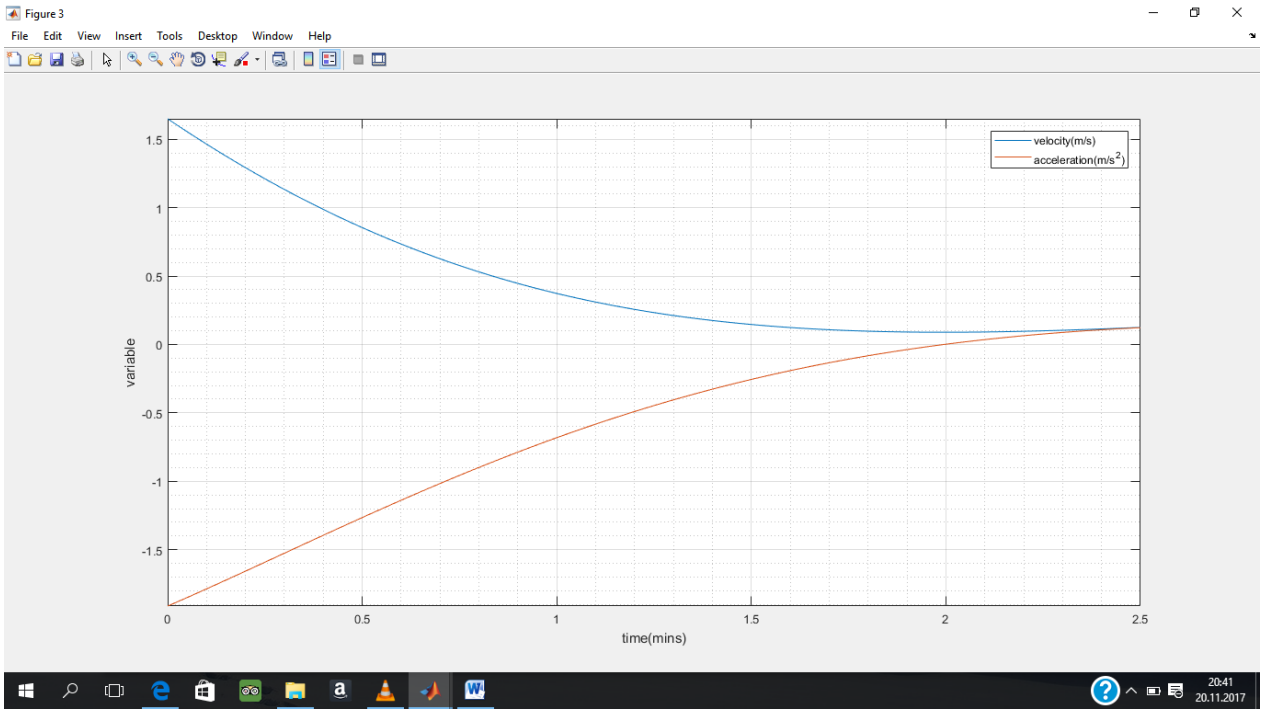
N0.4

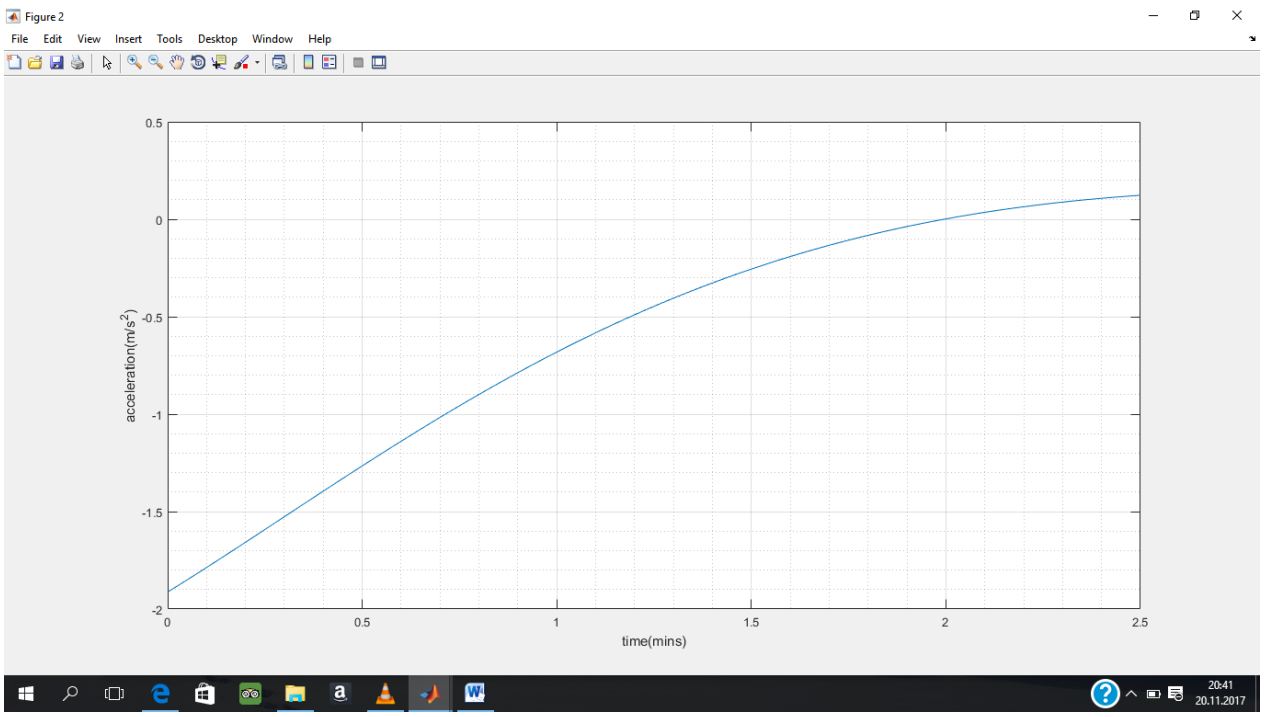
```
a.)
commandwindow
clear
clc
A=[0 10 4 -2;-3 -17 1 2;1 1 1 0;8 -34 16 -10]
B=inv(A)
C=[-4;2;6;4]
X=B*C

b.)
commandwindow
 clear
 clc
 close all
 syms t
 d= 1.5*(exp(-0.75*t))*sin(0.85*t)+0.375*t
 tn=(0:0.01:2.5)
 dp= diff(d)
 dpn=subs(dp,tn)
 figure(1)
 plot(tn,dpn)
 xlabel('time(mins)')
 ylabel('velocity(m/s)')
 grid on
 grid minor
 dl= diff(dp)
 dln= subs(dl,tn)
 figure(2)
```

```
plot(tn,dln)
xlabel('time(mins)')
ylabel('acceleration(m/s^2)')
grid on
grid minor
figure(3)
plot(tn,dpn,tn,dln)
xlabel('time(mins)')
ylabel('variable')
legend('velocity(m/s)','acceleration(m/s^2)')
axis tight
grid on
grid minor
```

output graph;







c.)

```
commandwindow
clear
clc
syms x
```

```
y= 5*(sin(5*x))^5
d=3.142*y^2
D=int(d,0,180)
B=double(D)
```