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### Assignment

Solution:

a commandwindow

```
clearvars
```

```
clc
```

```
format short g
```

```
syms t kp td tp
```

```
v = kp * (1 - exp(-(t - td) / tp))
```

```
mdata = xlsread('odesvbesdata', 'data 1');
```

```
t1 = mdata(:, 1);
```

```
v = mdata(:, 2);
```

```
v1 = round(mdata(100, 2), 1)
```

```
t0 = ones(length(v), 1)
```

```
t = [t0 t1]
```

```
% [mcoeff, mcoeffint, mresid, mresident, manova] = regress(v, t);
```

```
% mcoeff
```

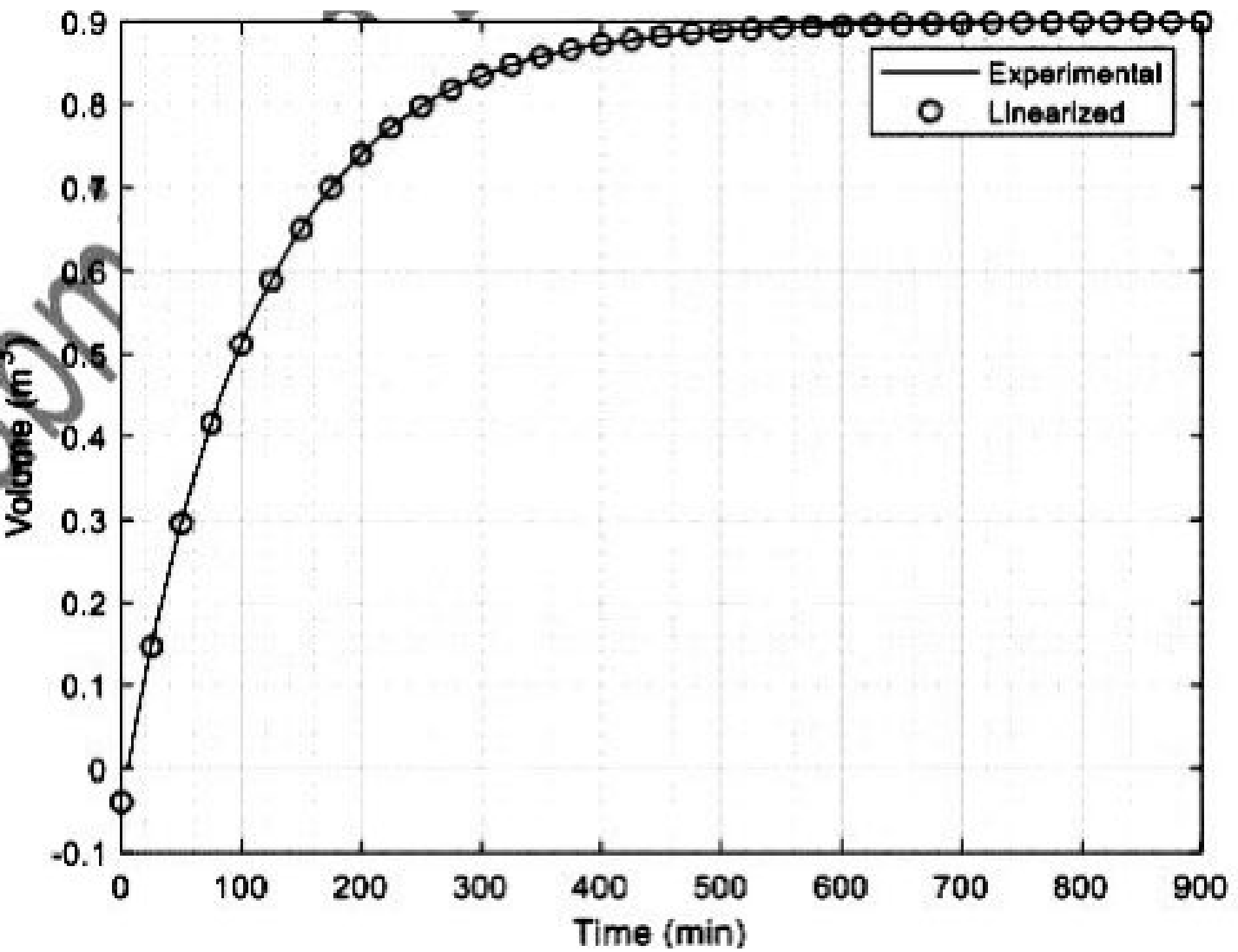
```
% rsquaredvalue = mcoeff(1)
```

```
% plot(t, v)
```

```
% grid on
```

```
% axis tight
```

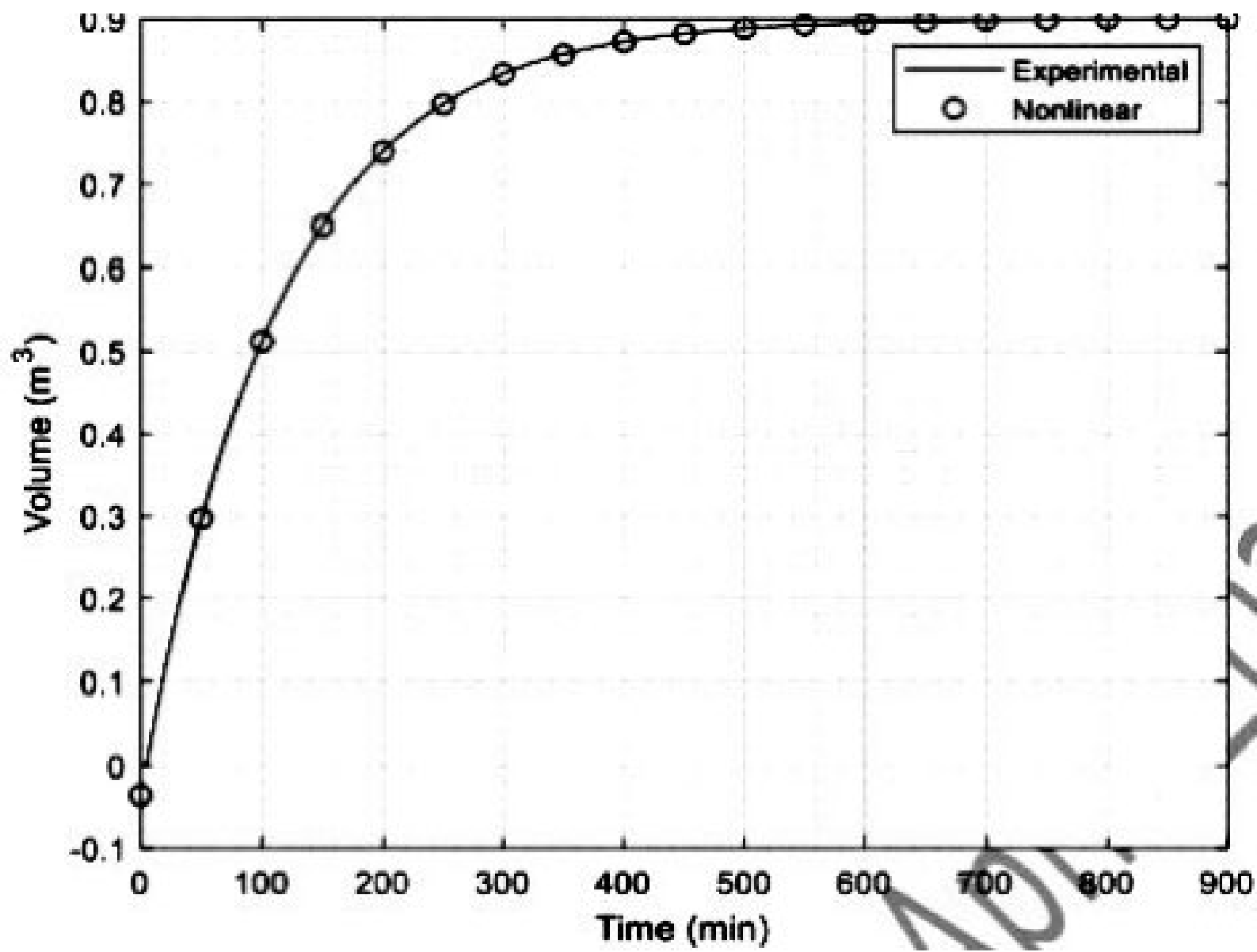
```
% grid minor
```



```

a11 command window
clearvars
clc
format short g
syms t kp td tp
mdata = xlsread('1587203818udevbesdata', 'data1');
t1 = mdata(:, 1);
v = mdata(:, 2);
t0 = ones(length(v), 1)
t = [t0 t1]
y = @(kp, td, tp) (-(exp(t1) - exp(-td)) / exp(tp));
initials = [0.1, 0.1, 0.1]
% [mcoeff, mcoeffint, mresid, mresidint, manova] = nlinfit(v, t, y, initials)
% mcoeff
plot(t, v)
grid on
grid minor

```



```

b Command window
clearvars
format short g
a = xlsread('wunmi', 'data1')
t = a(:, 1)
v = a(:, 2)
N = length(t);
x = [ones(N, 1) v(:)]
j = [x, '*x'] \ (x.'*t(:))
b = j, 1 - 1
c = 0.00145
xa = min(v)
xb = max(v)
k = linspace(xa, xb, 40)
f = (b.'k) - c
scatter(t, v)
plot(t, v, '-b');
hold on
% [mse, mmae, mase, mmse] = regress(t1, v1)
% mse
% mmae
% mase
% mmse
grid on
grid minor
axis tight

```

