
Table of Contents

.....	1
Heat Generation	1
Convection	2
Simply Supported Beam	3

% Cory Wolfe

Heat Generation

```
[x1,T1]=ode45(@d2Tdx2,[0 3],[300 0]);  
TL1 = T1(end,1)  
[x2,T2]=ode45(@d2Tdx2,[0 3],[300 10]);  
TL2 = T2(end,1)  
za = 0 + (10-0)/(TL2-TL1)*(250-TL1)  
[x3,T3]=ode45(@d2Tdx2,[0 3],[300 za]);  
TL3 = T3(end,1)  
plot(x3,T3(:,1))
```

TL1 =

61.7600

TL2 =

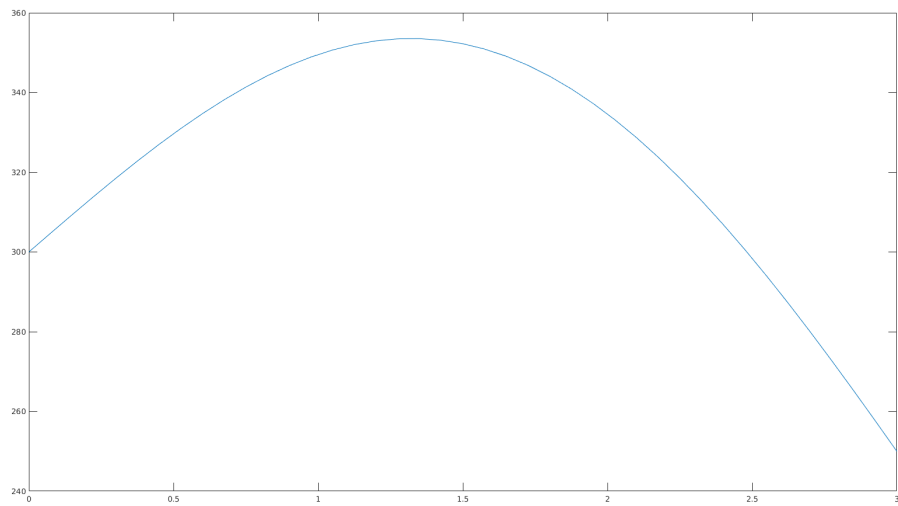
91.7600

za =

62.7467

TL3 =

250.0000



Convection

```
[x1,T1]=ode45(@ws22,[0 5],[500 0]);  
con1 = (T1(end,1)-200)-T1(end,2)  
[x2,T2]=ode45(@ws22,[0 5],[500 -100]);  
con2 = (T2(end,1)-200)-T2(end,2)  
za = 0 + (-100-0)/(con2-con1)*(0-con1)  
[x3,T3]=ode45(@ws22,[0 5],[500 za]);  
con3 = (T3(end,1)-200)-T3(end,2)  
plot(x3,T3(:,1))
```

con1 =

544.8768

con2 =

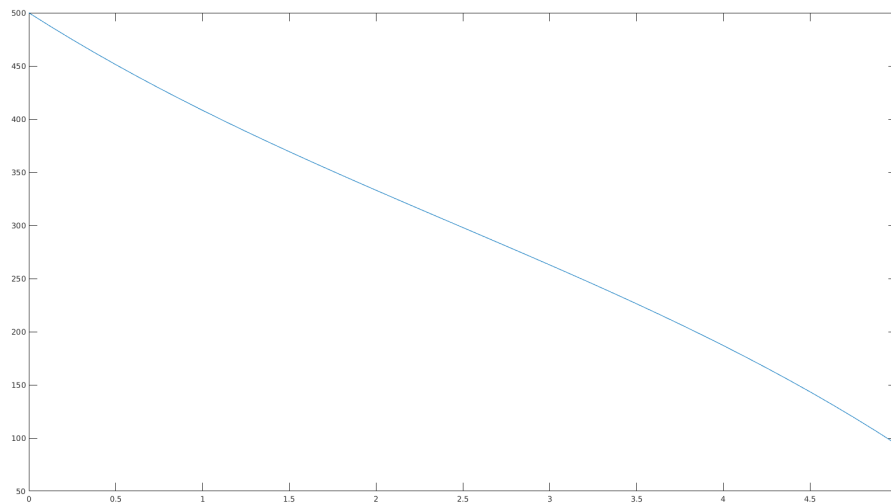
22.1988

za =

-104.2471

con3 =

-1.6823e-07



Simply Supported Beam

```
[x1,y1]=rk4sys(@uniformbeam,[0 4],[0 0],0.01,1e6,1e11,5e-4,4);  
yL1 = y1(end,1)  
[x2,y2]=rk4sys(@uniformbeam,[0 4],[0 -0.01],0.01,1e6,1e11,5e-4,4);  
yL2 = y2(end,1)  
za = 0 + (-0.01-0)/(yL2-yL1)*(0-yL1)  
[x3,y3]=rk4sys(@uniformbeam,[0 4],[0 za],0.01,1e6,1e11,5e-4,4);  
yL3 = y3(end,1)  
plot(x3,y3(:,1))
```

yL1 =

0.2133

yL2 =

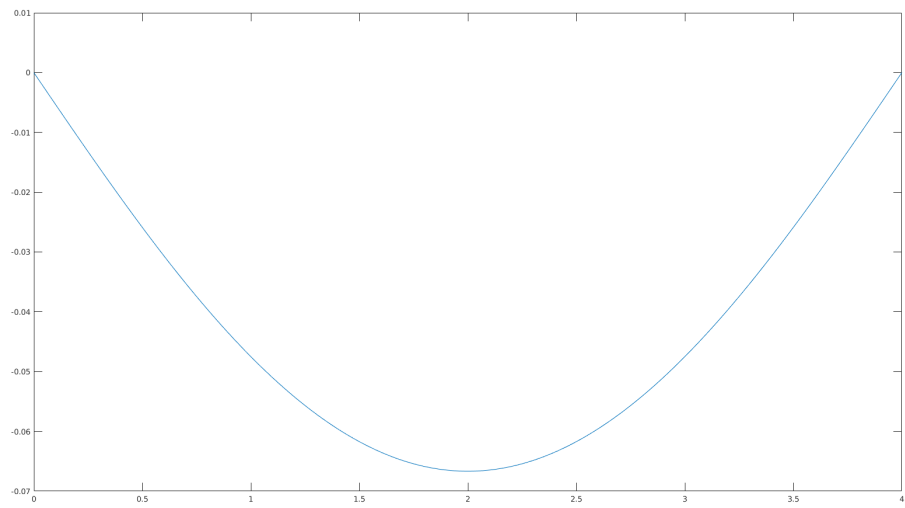
0.1733

za =

-0.0533

yL3 =

4.1774e-16



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