```
%Assignment 9, Question 1
%Coded by: Nicholas Paul
%For: Dr. Martha Dagnew. CEE 2219b
%March 25th 2019
```

# Question 1a and 1b

```
%Decalre initial variables
a = 0;
b=2;
es = 0.005;
maxit = 1000;

%Create Function
func =@(x) (exp(x).*sin(x))./(1+x.^2);

%Pass Function to the appropriate file to compute
Nicholas_Paul_Romberg(func, a, b, es, maxit)
```

```
Integral   iter      ea
1.97283    1.00000   7.97152
1.94184    2.00000   0.09975
1.93996    3.00000   0.00151

I =

    1.9400


iter =

     3


ea =

    0.0015


ans =

    1.9400
```

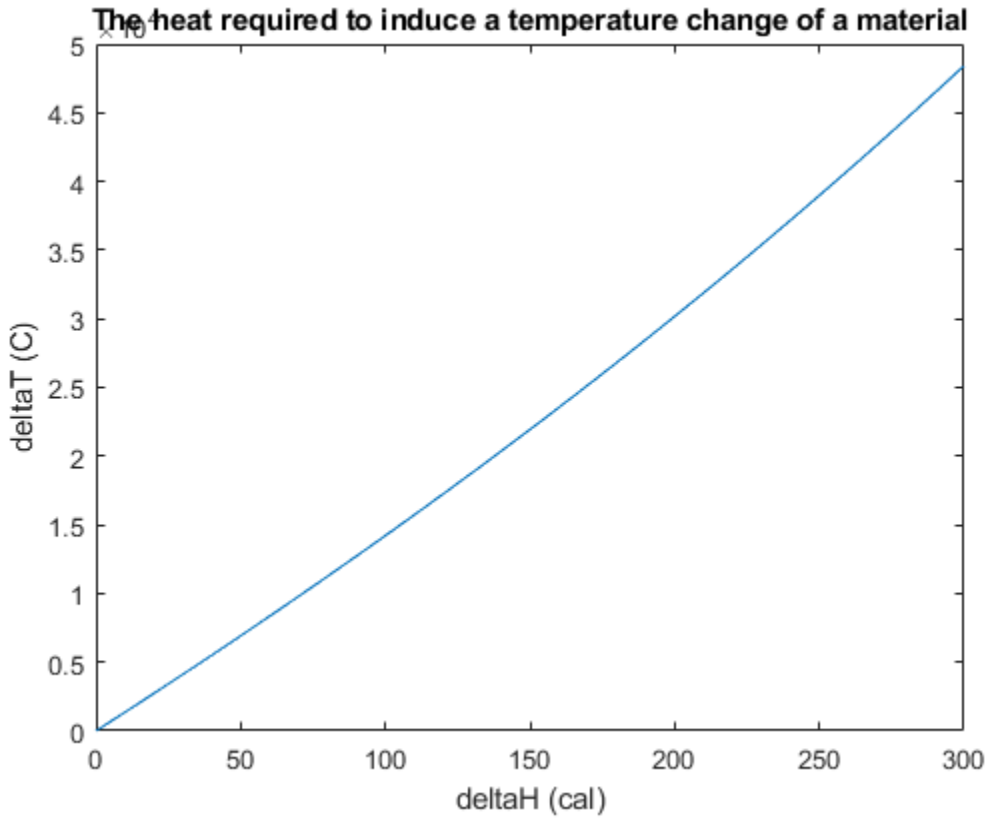
# Question 2

```
%Decalre initial variables
T = -100;
deltaT =0:300;
deltaH(1)=0;
```

```
%Create Function
func= @(T) (0.15+(1.75*10^-4).*T+(2.64*10^-7).*T.^2)*(1000);

for i=2:length(deltaT)
    deltaH(i)=integral(func,T,(T+ deltaT(i)));
end

%Plot Function
plot(deltaT,deltaH)
title('The heat required to induce a temperature change of a
 material')
xlabel('deltaH (cal)')
ylabel('deltaT (C)')
```




*Published with MATLAB® R2018a*