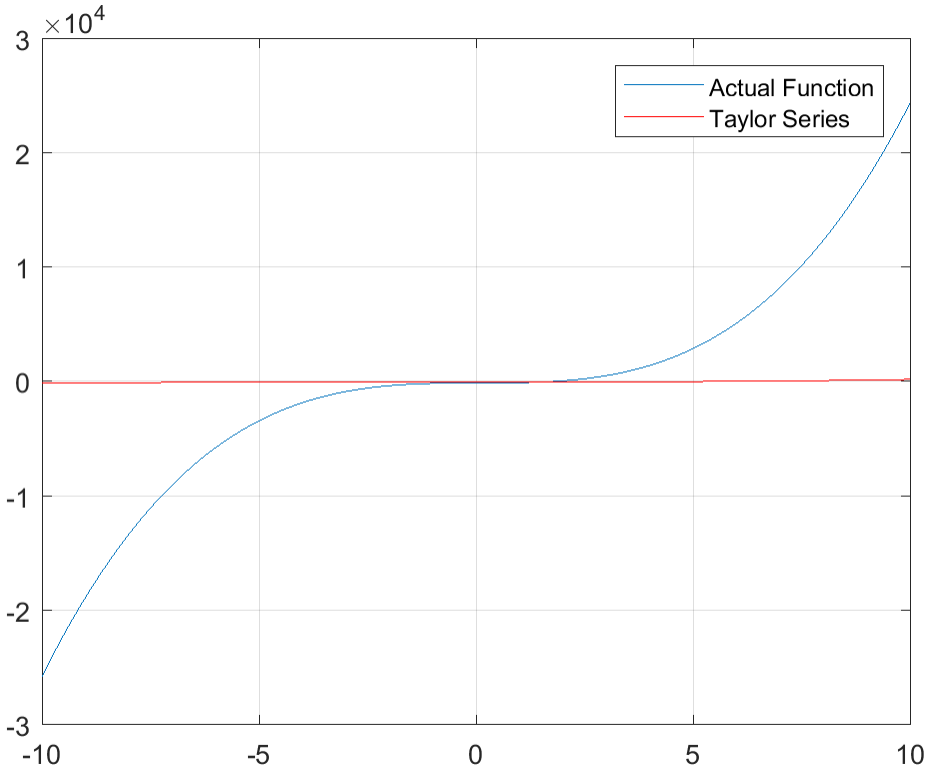
```
clc
clear
```

Problem 1

```
%specify the function and plot it before adding in the taylor series
%estimate
x=-10:.1:10;
y=25*x.^3-6*x.^2+7*x-88;
plot(x,y)
grid on
%add in the taylor series estimate and plot against the original
N=3;
ytay=0*y;
error=0;
for n=0:N
    ytay=ytay+(x.^n)./factorial(n);
end
hold on
plot(x,ytay,'r')
legend('Actual Function','Taylor Series')
error=(y-ytay)/y;
disp(error)
```

```
    0.9929
```



Problem 2

```
x2=1:.25:2; %setting the intervals to .25
d1=diff(y,2);%taking the first derivative at 2
d2=diff(y,3);
approx=0;
for x2=1:2 %on this interval subtract the first derivative from the
 first
    approx=d1-d1;
end
disp(approx)
```

```
  Columns 1 through 13

     0     0     0     0     0     0     0     0     0     0     0
 0     0

  Columns 14 through 26

     0     0     0     0     0     0     0     0     0     0     0
 0     0

  Columns 27 through 39

     0     0     0     0     0     0     0     0     0     0     0
 0     0
```

Columns 40 through 52

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 53 through 65

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 66 through 78

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 79 through 91

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 92 through 104

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 105 through 117

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 118 through 130

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 131 through 143

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 144 through 156

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 157 through 169

0 0 0 0 0 0 0 0 0 0 0 0 0

Columns 170 through 182

```
    0     0     0     0     0     0     0     0     0     0     0
0     0

  Columns 183 through 195

    0     0     0     0     0     0     0     0     0     0     0
0     0

  Columns 196 through 199

    0     0     0     0
```

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