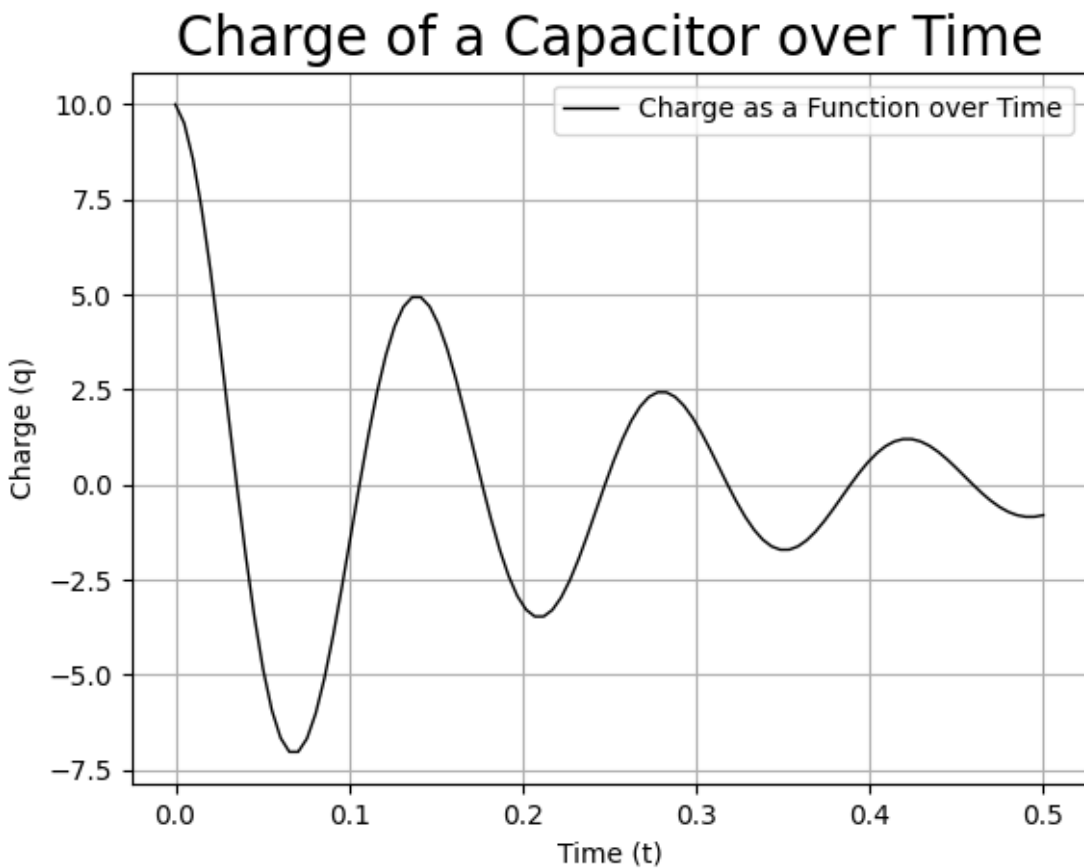
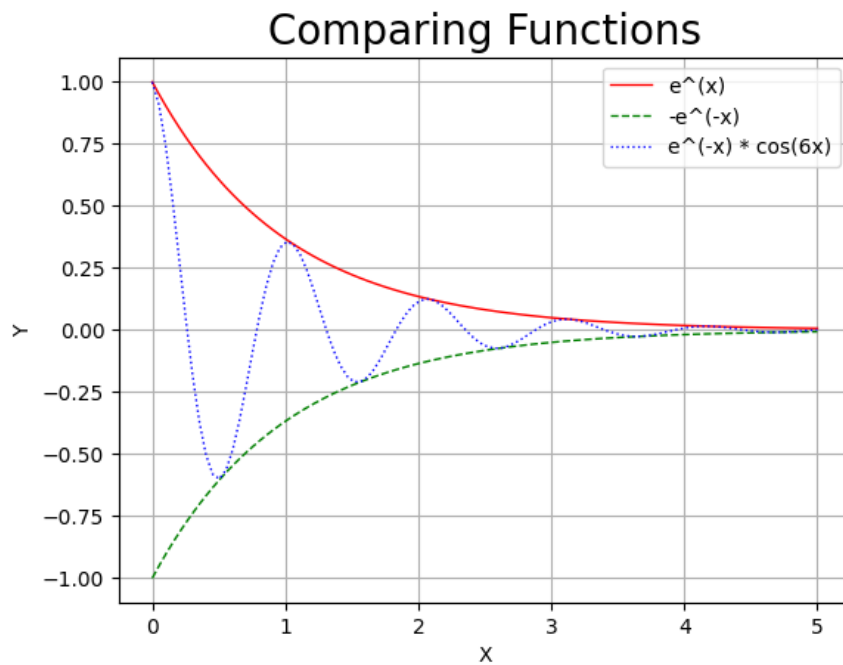


```
Activities Visual Studio Code Sep 3 10:34 lab2E1.py - Math242 - VisualStudio Code
File Edit Selection View Go Run Terminal Help
lab2E1.py X
Lab > src > lab2E1.py > ...
1 import numpy as np
2 import matplotlib.pyplot as plt
3 import math
4
5
6 Lakota Dolce
7 Lab 2
8
9
10 #Title and label variables
11 title = "Charge of a Capacitor over Time"
12 horizontal="Time (t)"
13 vertical = "Charge (q)"
14 gridTF = True
15 fsize = 20 #Font size
16 lwidth = 1; #line width
17 lstyle = "solid" #line style
18 lcolor = "black" #line color
19 llabel = "Charge as a Function over Time"
20 start = 0
21 stop = .5
22 accuracy = 100
23
24 #Function
25 t = np.linspace(start,stop, accuracy) #(start, stop, # of points)
26 ft = 10*(np.exp(-(50*t)/(2*5)))*(np.cos(math.sqrt((1/(5*(10**4)))-(50/(2*5))**2) * t))
27 #Note
28 # x = np.arange(start,stop,accuracy) #(start, stop, gap)
29 #e^x = np.exp(x) e^(2x) = np.exp(2*x)
30 #cos() = np.cos() sin() = np.sin()
31
32 #Plotting
33 plt.plot(t,ft, linestyle = lstyle, linewidth = lwidth, label = llabel, color = lcolor)
34 plt.title(title,fontsize = fsize)
35 plt.xlabel(horizontal)
36 plt.ylabel(vertical)
37 plt.legend()
38 plt.grid(gridTF)
39 plt.show()
```



```
Activities Visual Studio Code Sep 3 13:39 lab2E2.py - Lab - VisualStudio Code
File Edit Selection View Go Run Terminal Help
lab2E2.py x
src > lab2E2.py > ...
9 #Title and label variables
10 title = "Comparing Functions"
11 horizontal="x"
12 vertical = "y"
13 gridTF = True
14 fsize = 20 #Font size
15 lwidth = 1; #line width
16 lstyle = "solid" #line style
17 lstyle2 = "dashed" #line style
18 lstyle3 = "dotted" #line style
19 lcolor = "red" #line color
20 lcolor2 = "green" #line color
21 lcolor3 = "blue" #line color
22 llabel = "e^(x)"
23 llabel2 = "-e^(-x)"
24 llabel3 = "e^(-x) * cos(6x)"
25 start = 0
26 stop = 5
27 accuracy = 100
28
29 #Function
30 x = np.linspace(start,stop, accuracy) #(start, stop, # of points)
31 y = np.exp(-x)
32 y2 = -np.exp(-x)
33 y3 = np.exp(-x) * np.cos(6*x)
34
35 #Note
36 # x = np.arange(start,stop,accuracy) #(start, stop, gap)
37 #e^x = np.exp(x) e^(2x) = np.exp(2*x)
38 #cos() = np.cos() sin() = np.sin()
39
40 #Plotting
41 plt.plot(x,y, linestyle = lstyle, linewidth = lwidth, label = llabel, color = lcolor)
42 plt.plot(x,y2, linestyle = lstyle2, linewidth = lwidth, label = llabel2, color = lcolor2)
43 plt.plot(x,y3, linestyle = lstyle3, linewidth = lwidth, label = llabel3, color = lcolor3)
44 plt.title(title,fontsize = fsize)
45 plt.xlabel(horizontal)
46 plt.ylabel(vertical)
47 plt.legend()
48 plt.grid(gridTF)
49 plt.show()
```



```
Activities Visual Studio Code Sep 3 13:38 lab2E3.py - Lab - Visual Studio Code
File Edit Selection View Go Run Terminal Help
lab2E3.py x lab2_plotting.pdf
src > lab2E3.py > ...
6 Lakota Dolce
7 Lab 2
8 """
9 #Title and label variables
10 title = "Photodegradation of Aqueous Bromine"
11 horizontal="Concentration (c)"
12 vertical = "Time (t)"
13 gridTF = True
14 fsize = 20 #Font size
15 lwidth = 1; #line width
16 lstyle = "dotted" #line style
17 lcolor = "blue" #line color
18 llabel = "Concentration curve"
19 llabel2 = "Concentration Data"
20 start = 10
21 stop = 70
22 accuracy = 100
23 gap = 10
24
25 #Function
26 #t = np.linspace(start,stop, accuracy) #(start, stop, # of points)
27 t = np.arange(start, stop, gap) #(start, stop, gap)
28 y = 4.84 * (np.exp(-.034*t))
29 y2 = [3.4, 2.6, 1.6, 1.3, 1, .5]
30
31 #Note
32 #e^x = np.exp(x), e^(2x) = np.exp(2*x)
33 #cos() = np.cos(), sin() = np.sin()
34
35
36 #Plotting
37 plt.plot(t,y, linestyle = lstyle, linewidth = lwidth, label = llabel, color = lcolor)
38 plt.plot(t,y2, "x")
39 plt.title(title,fontsize = fsize)
40 plt.xlabel(horizontal)
41 plt.ylabel(vertical)
42 plt.legend()
43 plt.grid(gridTF)
44 plt.show()
```

