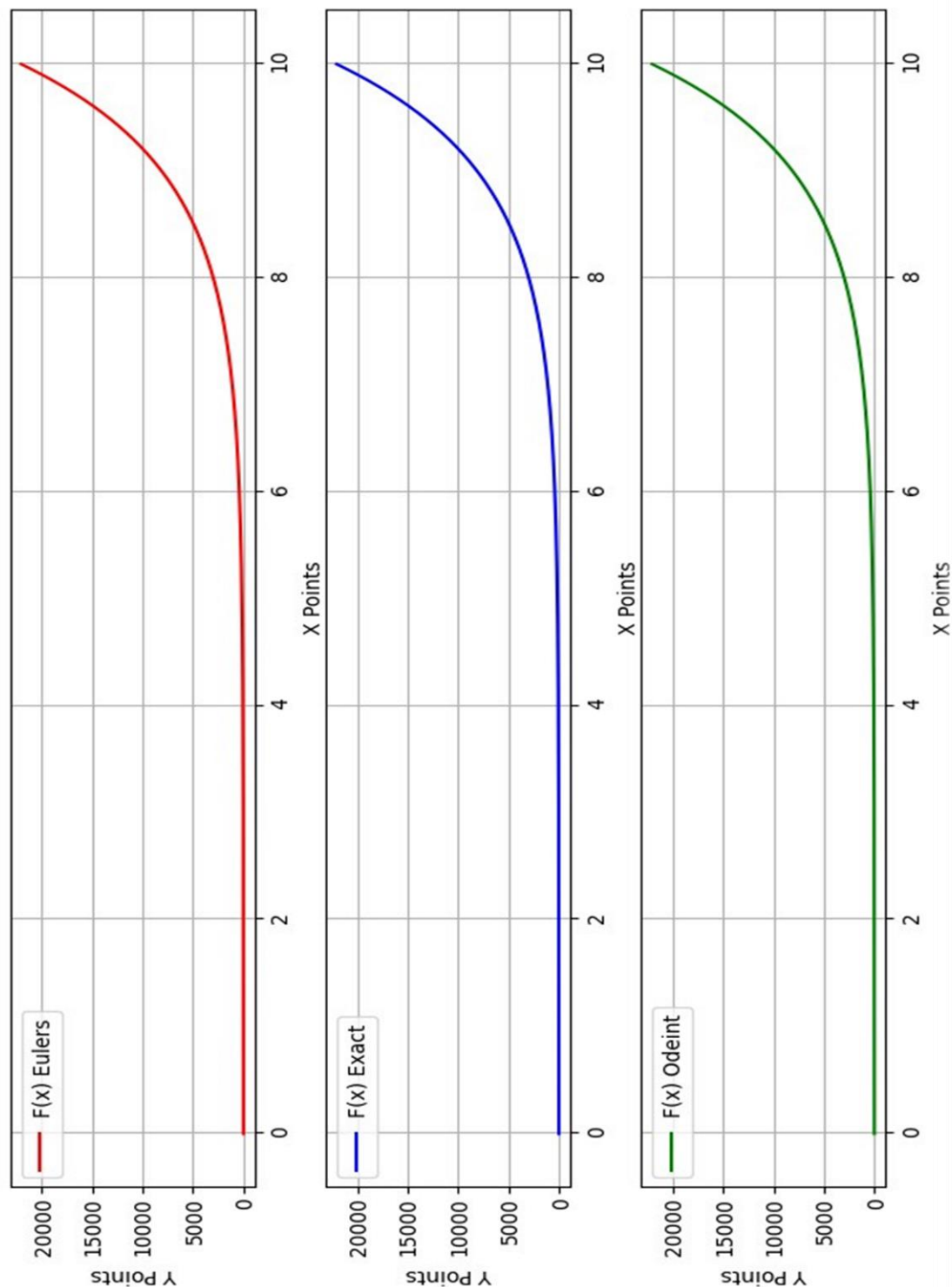


To Solve First Order Differential Equation by Euler Method and compare it with Exact Solution and Inbuilt Function.



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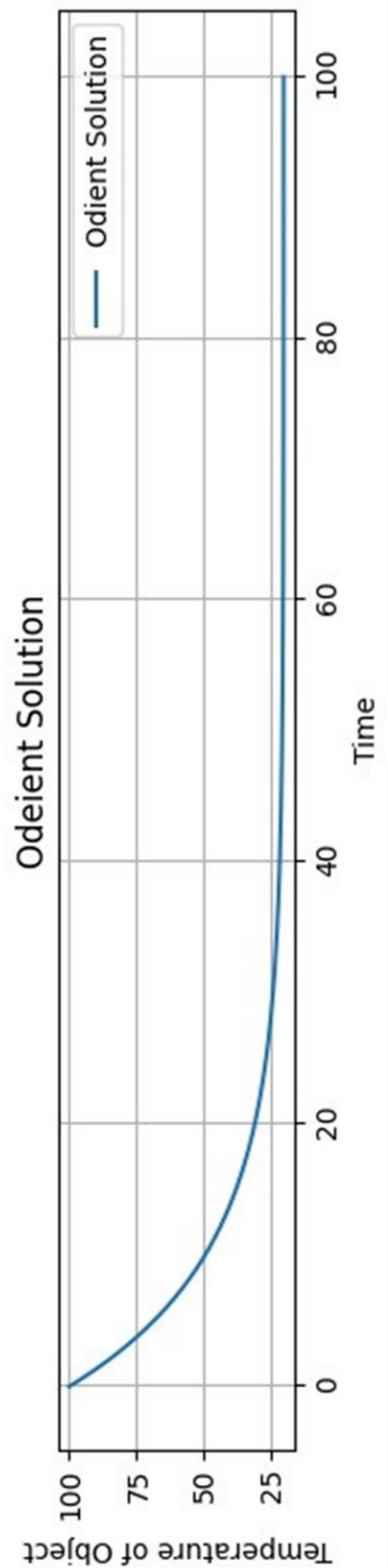
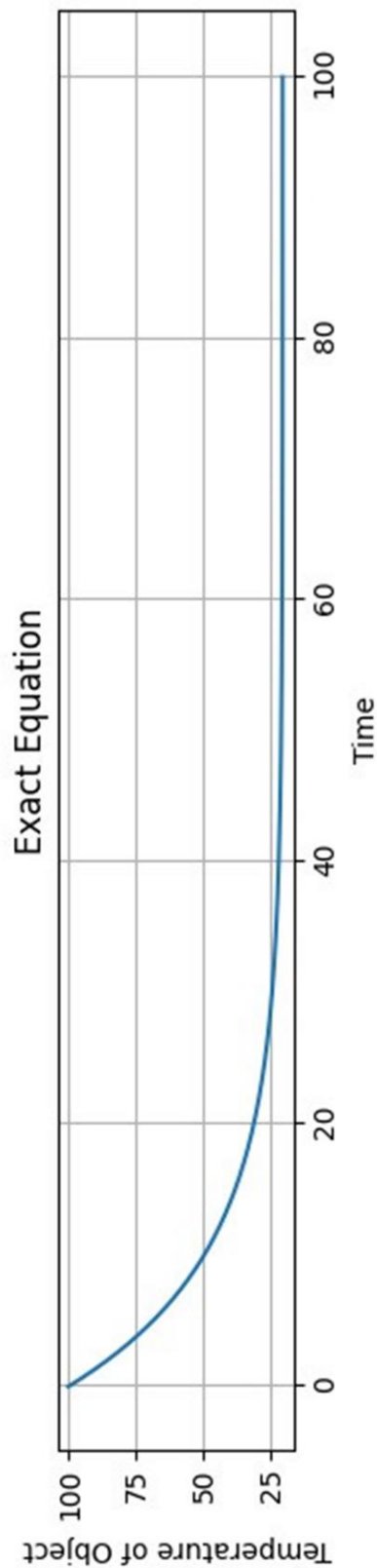
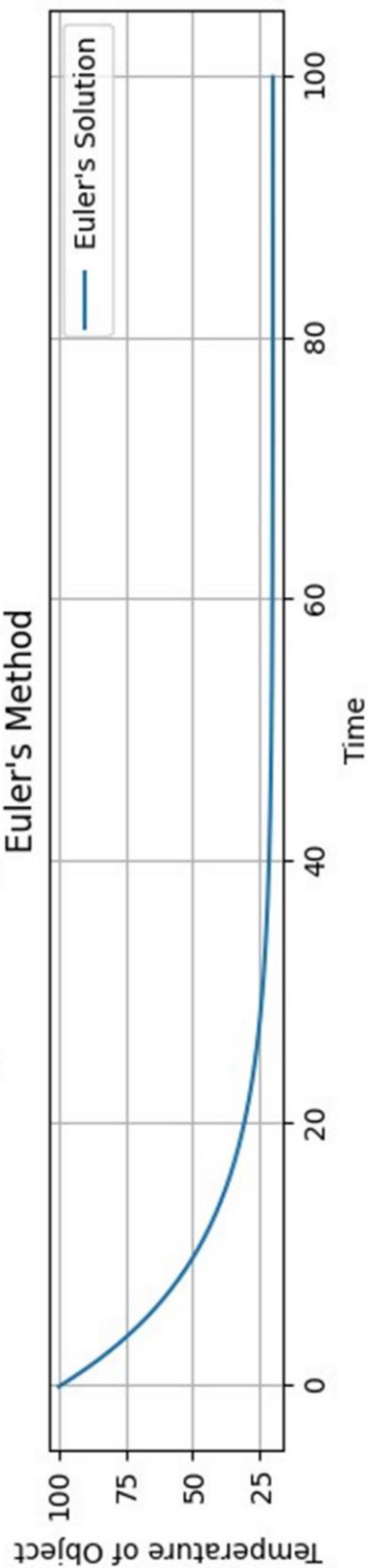
Enter Initial value of X: 0

Enter Value of Y at Initial value of X: 1

Enter Step Size: 0.001

Enter last value of interval: 10

# To Plot Newton's cooling law ODE by Euler method, Exact solution & Inbuilt solver



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Newton's Law of Cooling

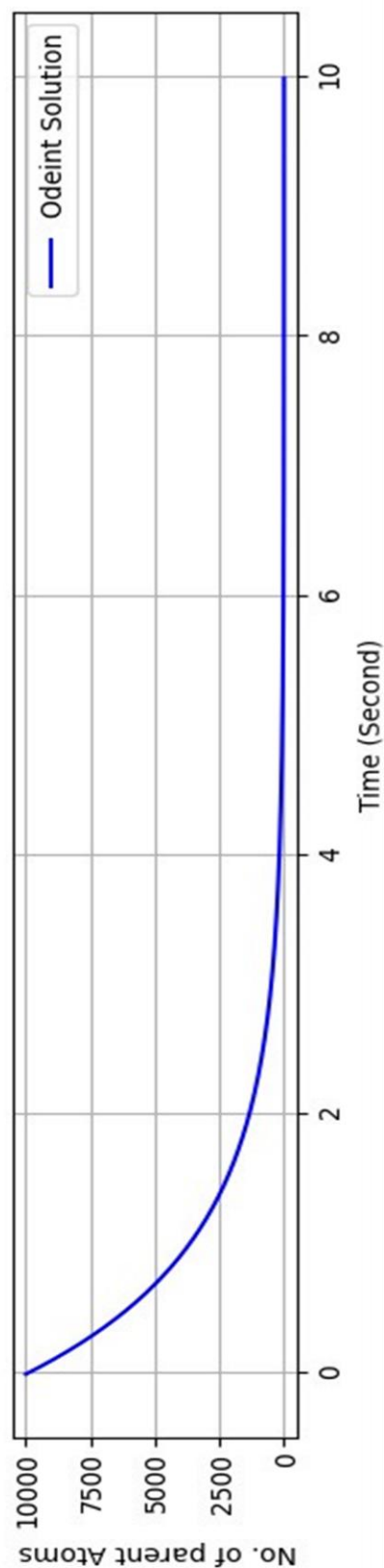
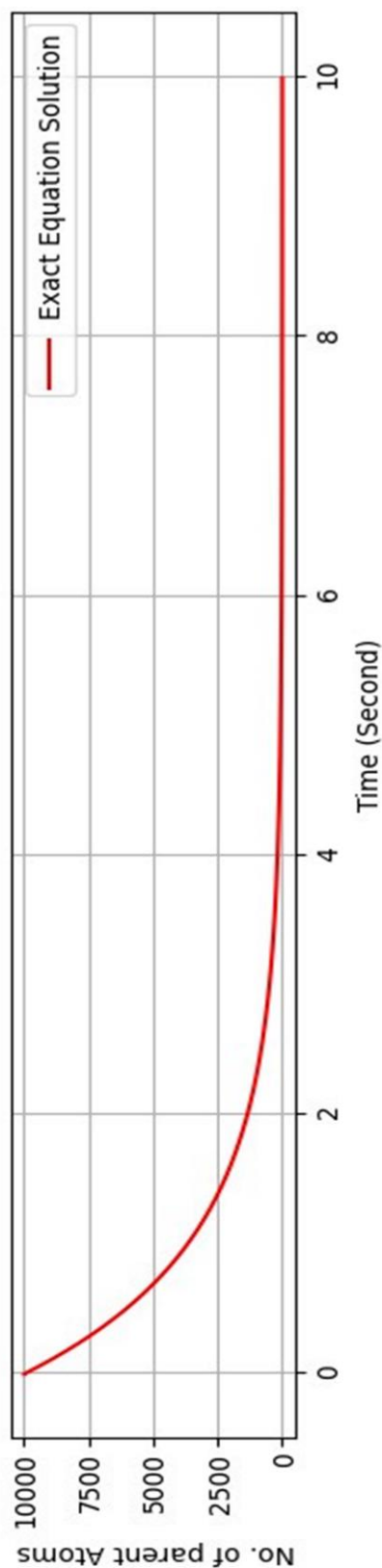
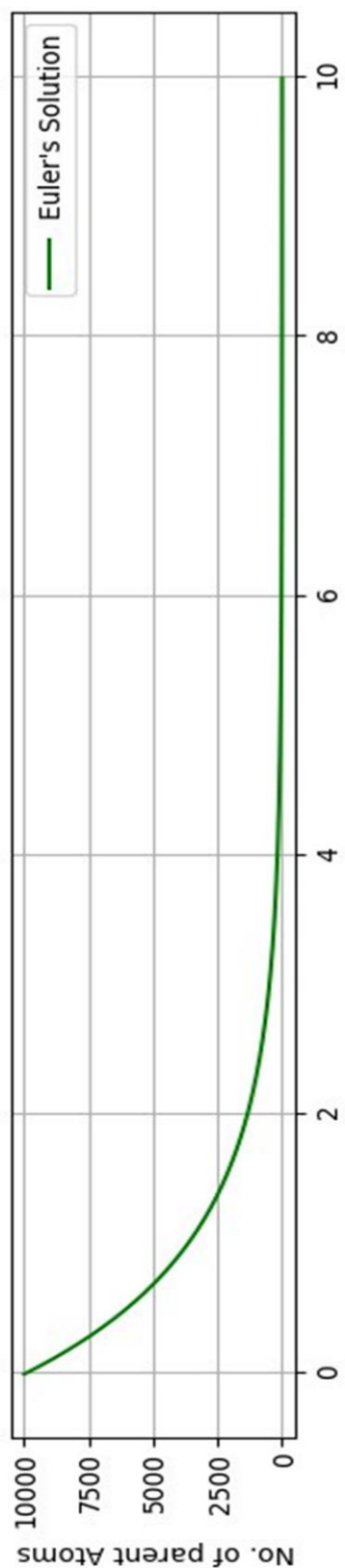
Temperature is in Degree Celsius and time is in seconds

Enter initial Temperature of Object: 100

Enter Surrounding temperature: 20

Enter time from t=0, at which temperature of Object to be calculated: 100

To Plot Radioactive Decay ODE by Euler method, Exact solution & Inbuilt solver.



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Radioactive Decay

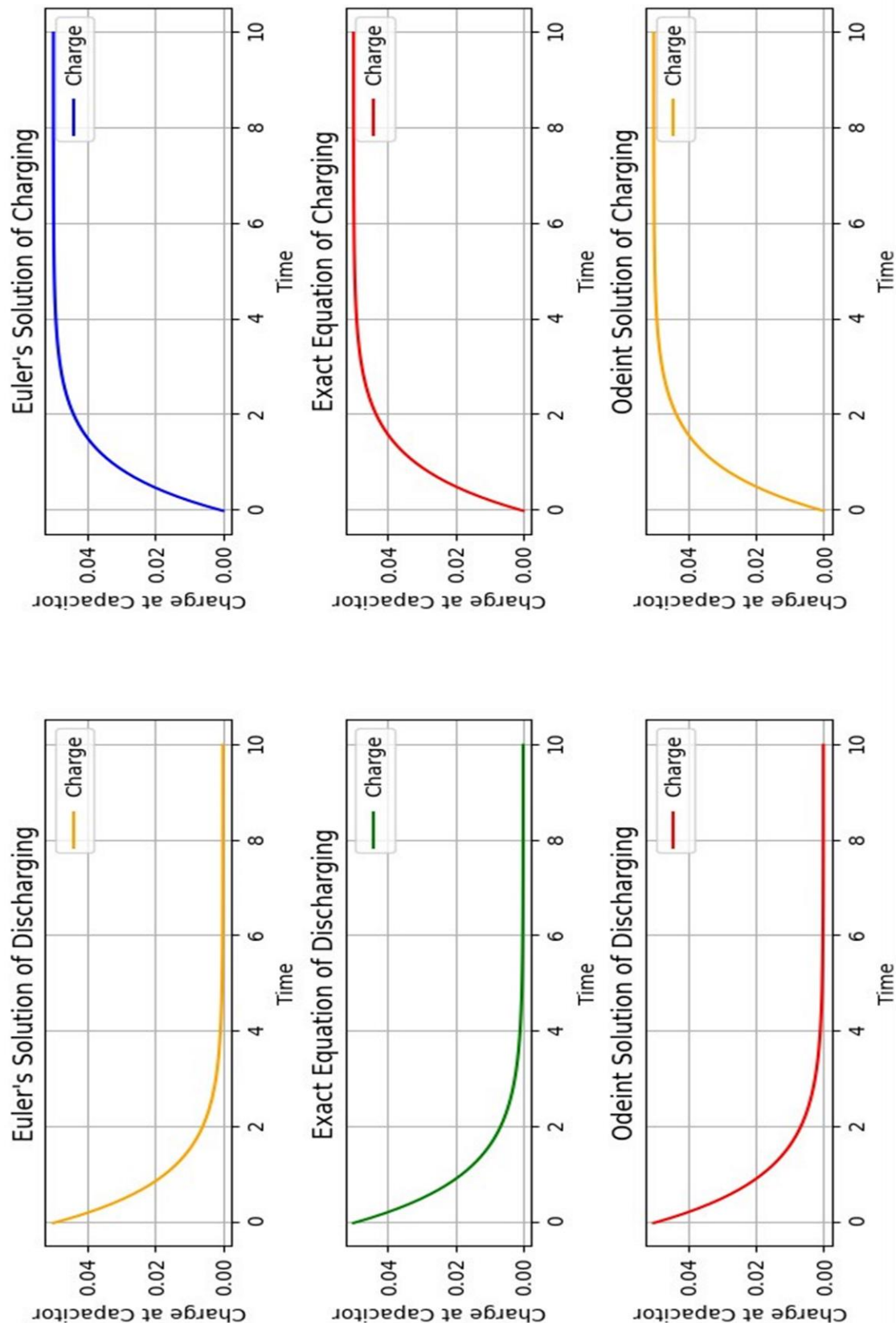
Time is in Seconds

Enter Number of Parent Atoms at t=0: 10000

Enter time instant at which Remaining of Parent Atoms to be calculated: 10

Enter Radioactive Decay constant value: 1

To Plot Charging and Discharging of a capacitor in RC circuit ODE with DC source by Euler Method, Exact solution, Inbuilt solver



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RC Circuit Charging and Discharging of Capacitor

Capacitance is in Farad, resistance is in ohm,time is in second,charge in coulomb,voltage in volts.

Enter Capacitance of Capacitor: 0.01

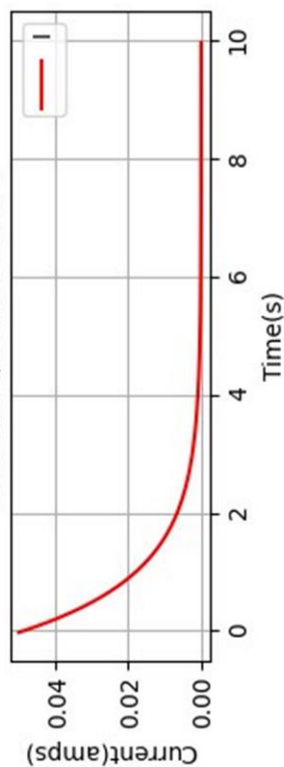
Enter EMF of Battery: 5

Enter Resistance of Resistor: 100

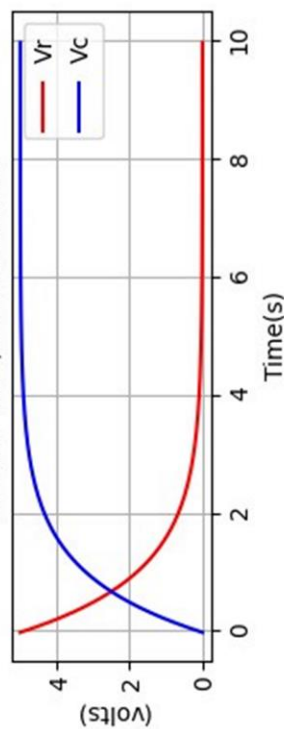
Enter time instant at which charge on capacitor to be calculated: 10

To Plot Current in RC circuit and potential ODE with DC source by Euler Method, Exact solution, Inbuilt solver.

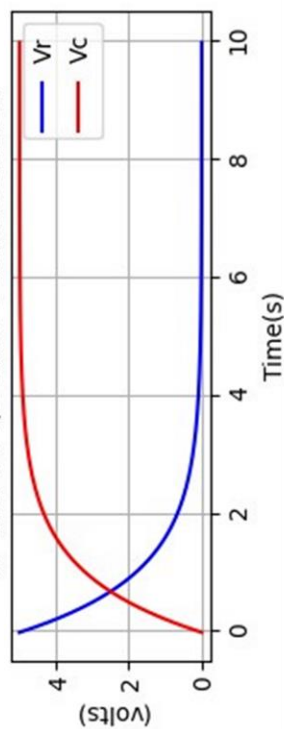
Current v/s time Euler's



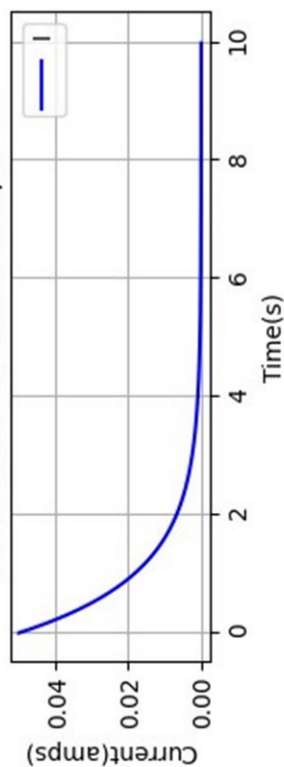
Vr and Vc v/s time Eulers



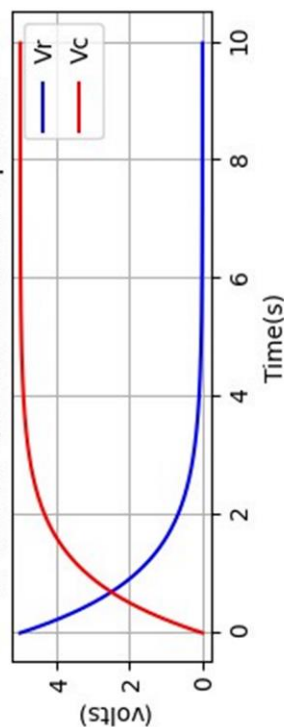
Vr and Vc v/s time Odeint Solution



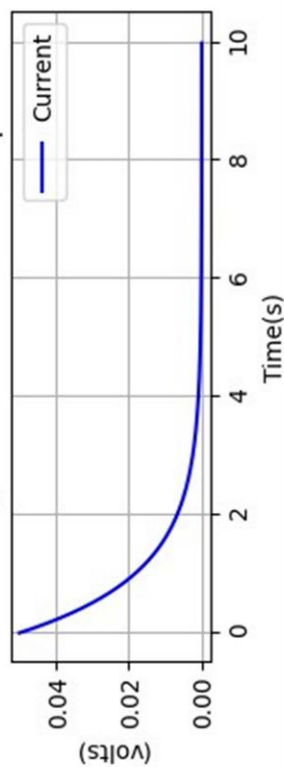
Current v/s time Solution Equation



Vr and Vc v/s time Solution equation



Current v/s time Odeint Solution equation



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RC Circuit

Capacitance is in Farad, resistance is in ohm,time is in second,charge in coulomb,voltage in volts.

Enter the value of resistance in ohms:100

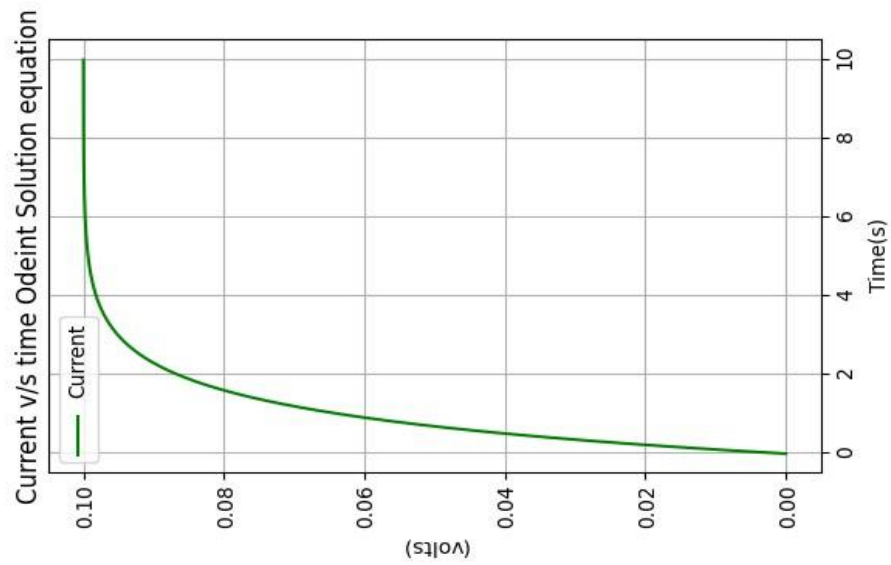
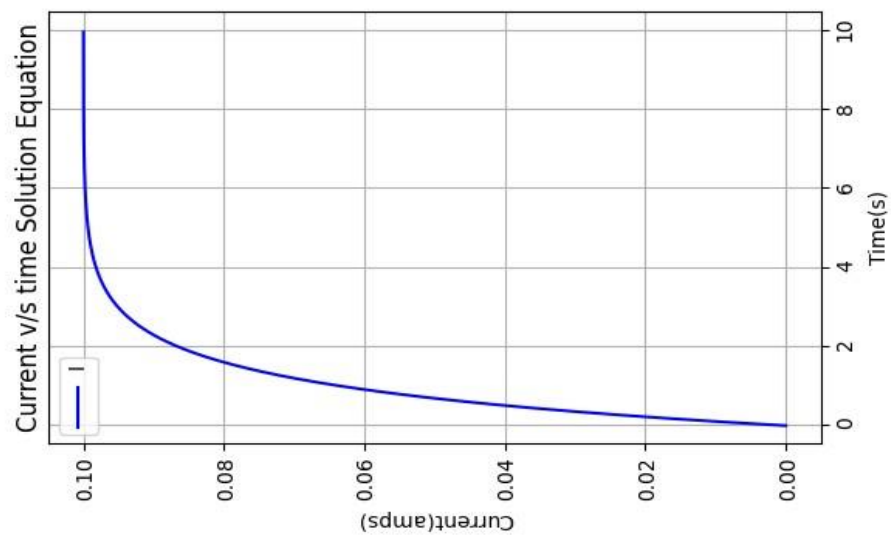
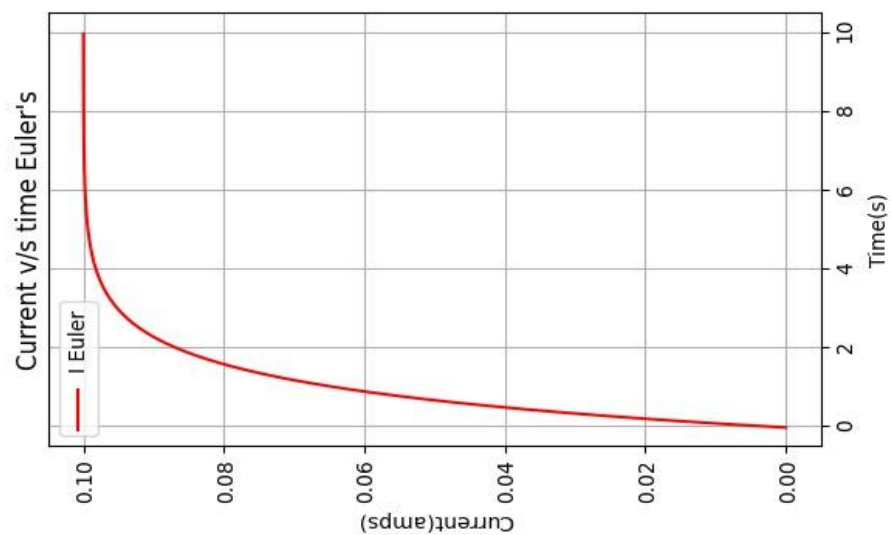
Enter the value of capacitance in farads:0.01

Enter the value of EMF in volts:5

Enter time instant at which current to be measured:10



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To Plot Current in RL circuit ODE with DC source by Euler Method, Exact solution, Inbuilt solver.



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Variation of current with time in RL Circuit

Resistance is in ohm,time is in second,Inductance in henry,voltage in volts.

Enter Inductance of Inductor: 100

Enter EMF of Battery: 10

Enter Resistance of Resistor: 100

Enter time instant at which Current through inductor to be calculated: 10