 **CS-LAB # 03**

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**Task 01:**

**Code:**

t = 0:0.1:10;

Y0 = [0 1 1];

[T, Y] = ode23("diff\_func", t, Y0);

plot(T,Y)

**Diff Function:**

function dy = diff\_func(t, y)

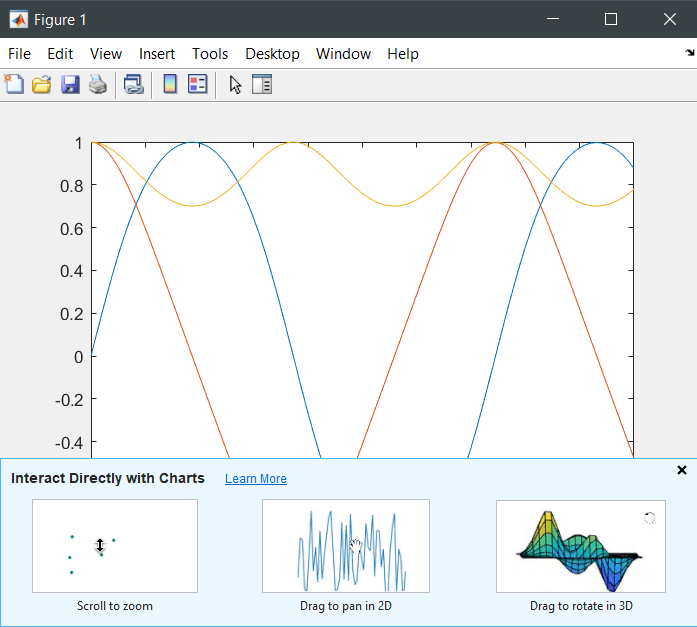
dy = zeros(3,1);

dy(1) = y(2)\*y(3);

dy(2) = -1\*y(1)\*y(3);

dy(3) = -0.51\*y(1)\*y(2);

**Output:**

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**Task 02:**

t = 0:0.1:10;

Y0 = [0 1];

[T, Y] = ode23("diff\_func2", t, Y0)

plot(T,Y)

**Diff Function:**

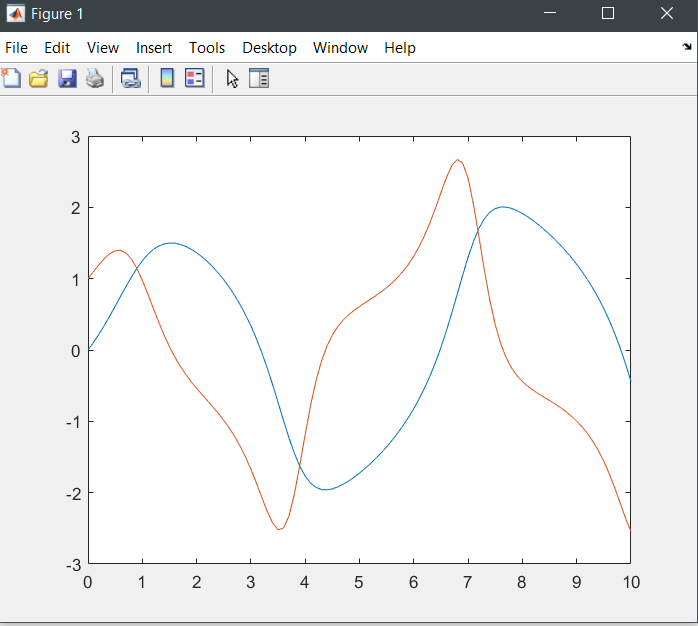
function dy = diff\_func2(t, y)

dy = zeros(2,1);

dy(1) = y(2);

dy(2) = -1\*y(1)\*y(1)\*y(2) + y(2) - y(1);

**Output:**

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**Task 03:**

t = 0:1:10;

Y0 = [0 4 2 1 1];

[T, Y] = ode45('diff\_func3', t, Y0);

plot(T,Y)

**Diff Function :**

function dy = diff\_func3(t, y)

dy = zeros(5,1);

dy(1) = y(2);

dy(2) = y(3);

dy(3) = y(4);

dy(4) = y(5);

dy(5) = -1\*y(5)\*y(4) + 2\*y(3)\*y(2) -1\*y(1);

**Output:**

