CODES AND PLOTS

Link to collab:
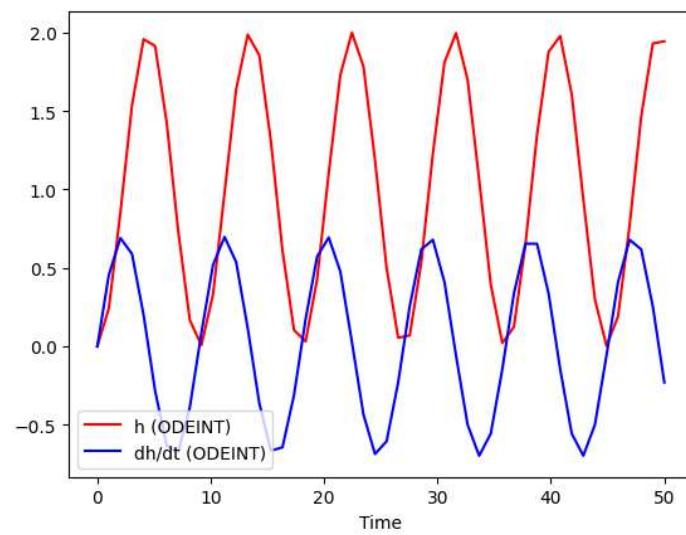
Plots;
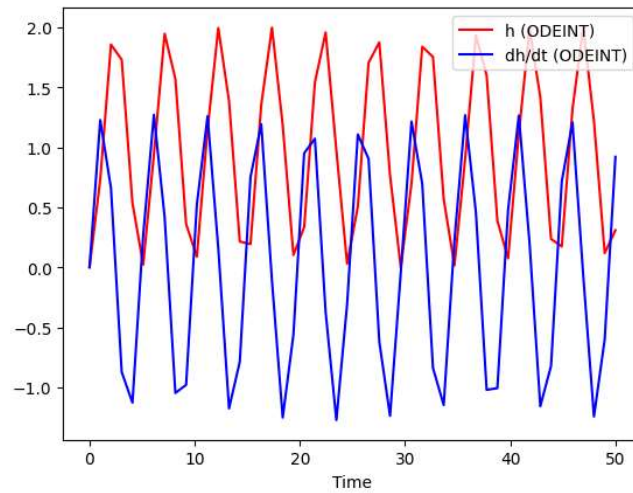
1. P controller
   Kp =5
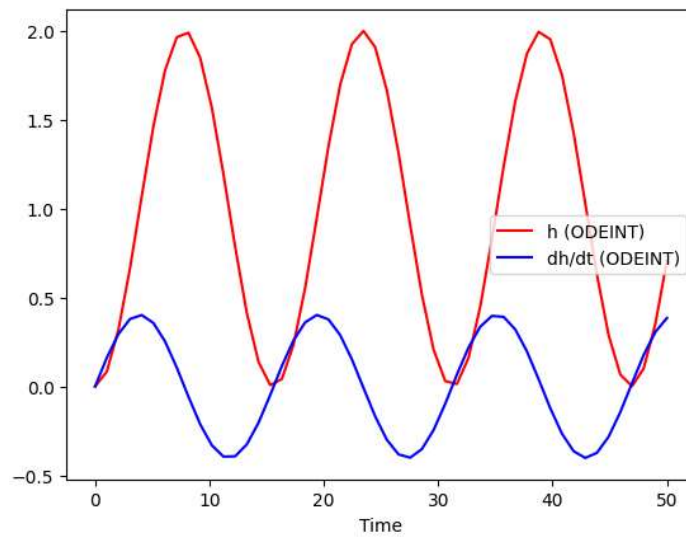
Kp = 15
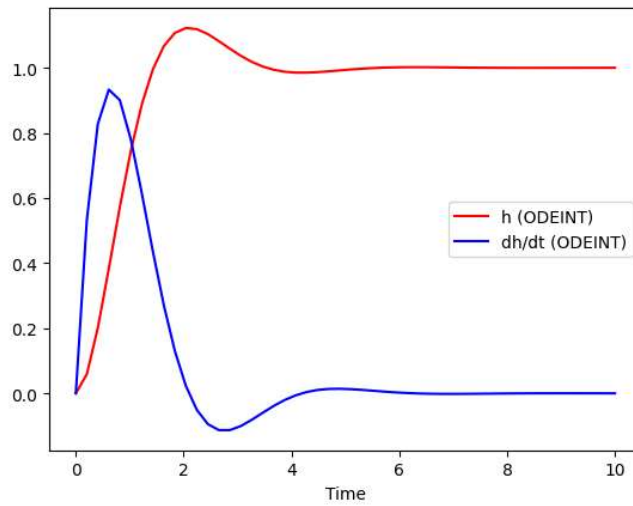
Kp = 50

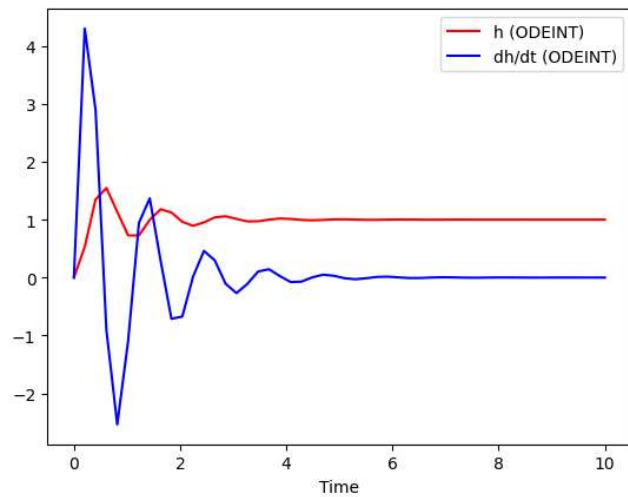
2. PD Controller – Under Damped
   Kp = 100, kd = 61.6

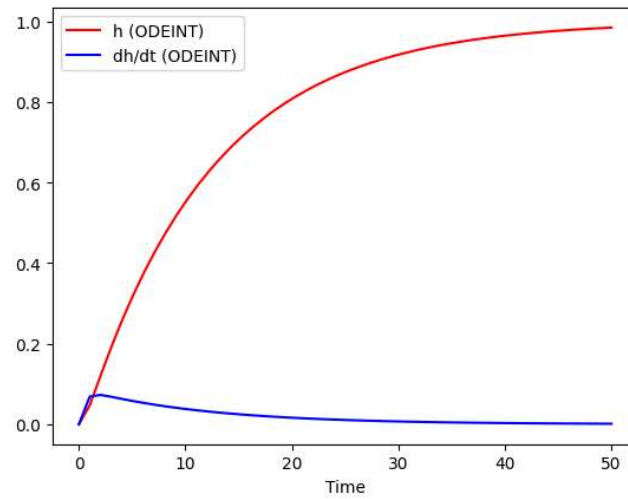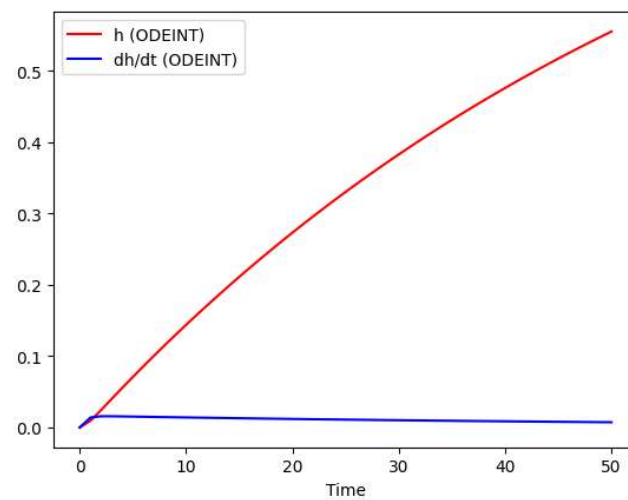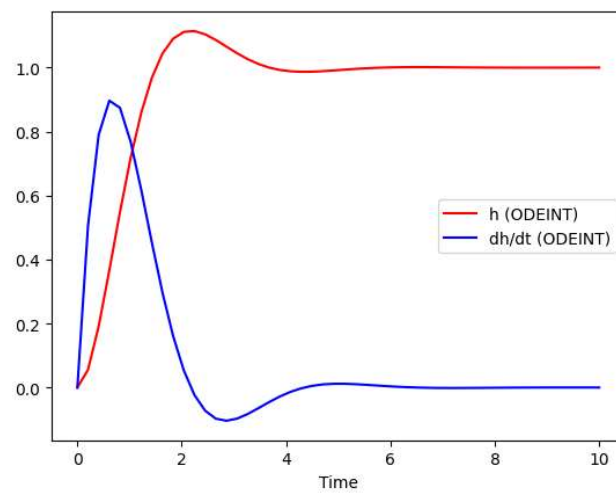Kp = 1000, kd = 61.6

3. PD Controller – Overdamped
   Kp = 5, kd = 61.6

Kp = 1, kd = 61.6
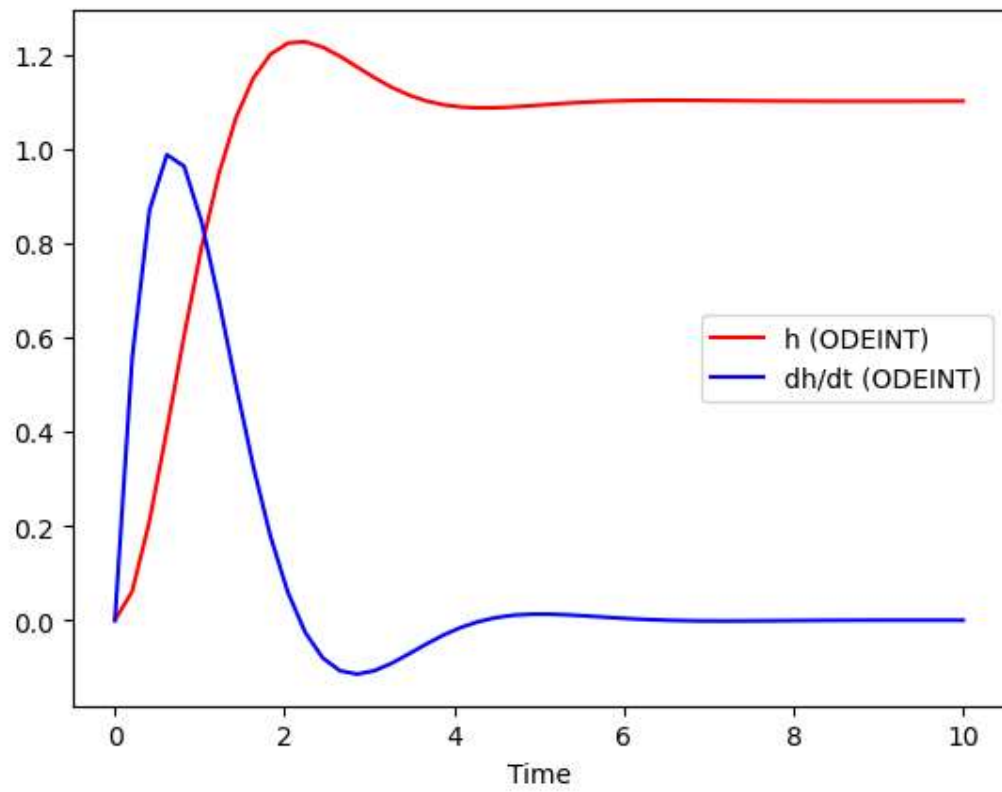

4. PD controller – Underdamped with noice (u' = 0.95 u)
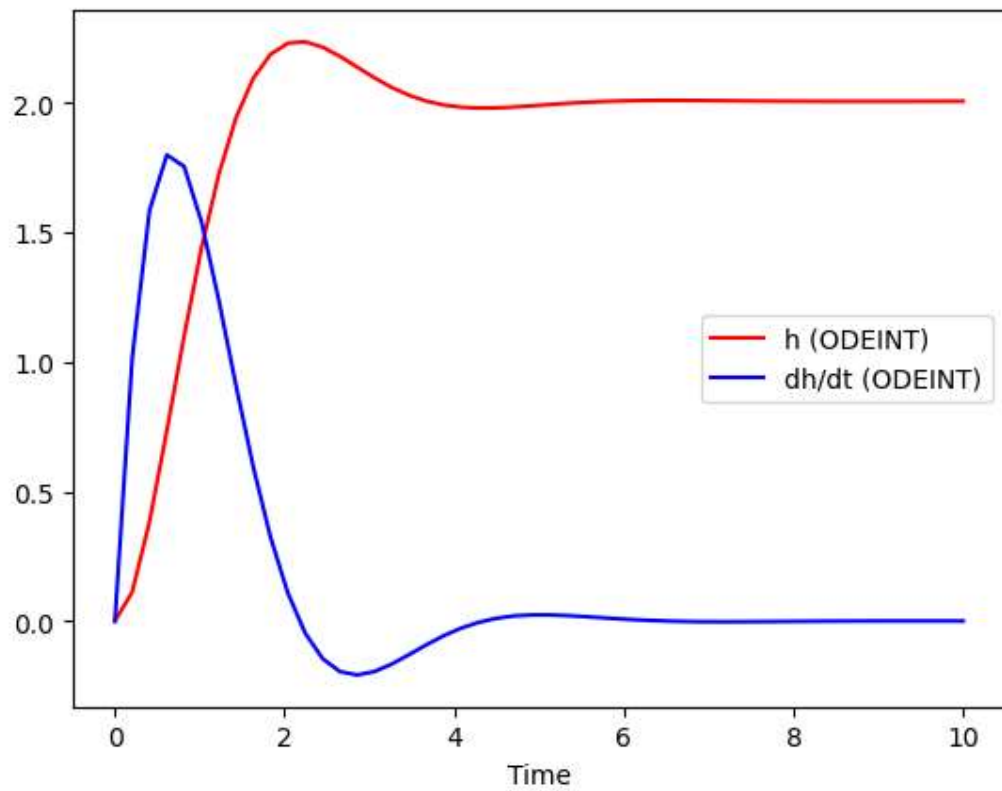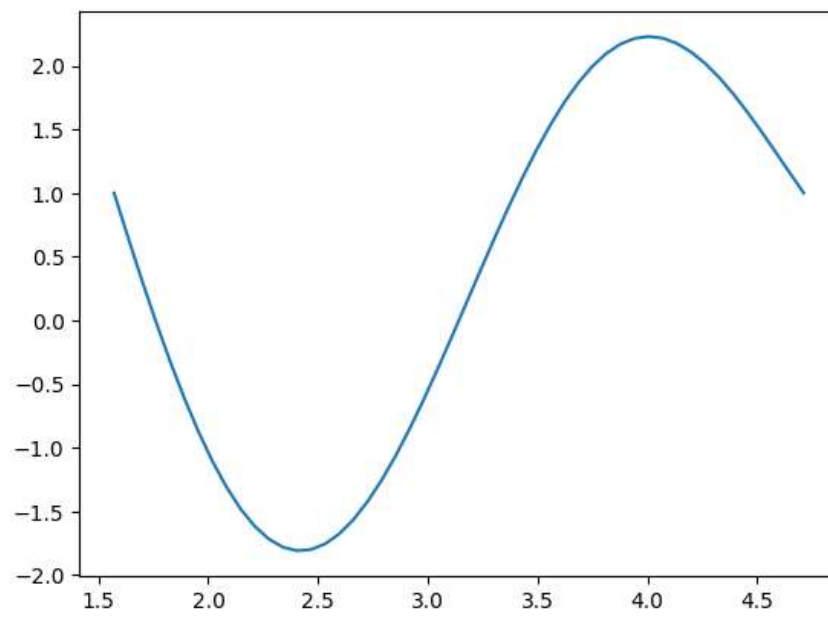   Kp = 100, kd =64.84

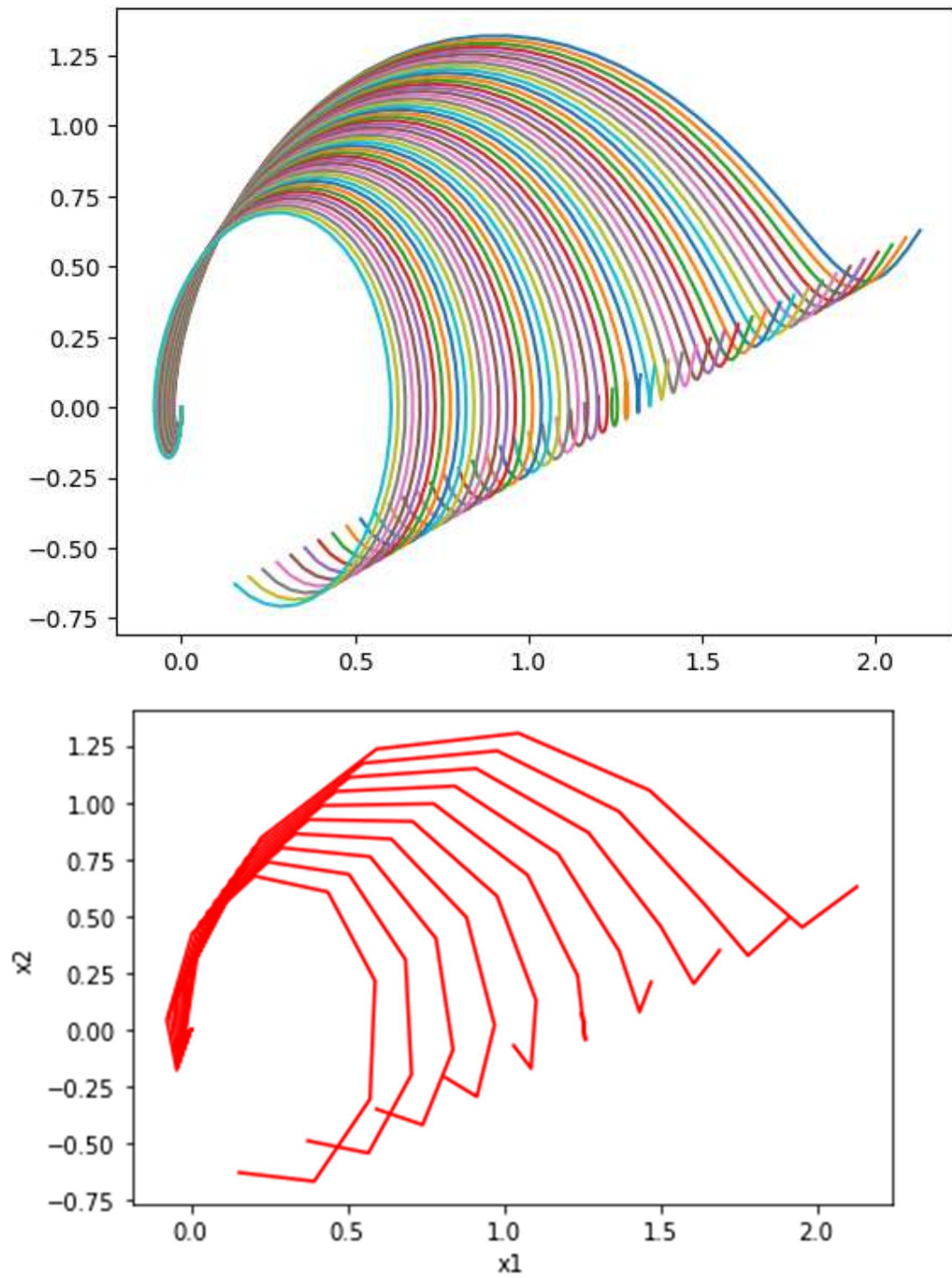kp = 100, kd = 64.84, ki = 10

kp = 100, kd = 64.84, ki = 100

Question 3:

Plot of v(x)

The phase portrait for the closed-loop dynamics under the control law (20)

Plot the indicator function χU for the set U defined in (25);