2.1 $\frac{dC_E}{dt} = k_2 C_{ES} + k_3 C_{ES} - k_1 C_E C_S$

$\frac{dC_S}{dt} = k_2 C_{ES} - k_1 C_E C_S$

$\frac{dC_{ES}}{dt} = k_1 C_E C_S - k_2 C_{ES} - k_3 C_{ES}$

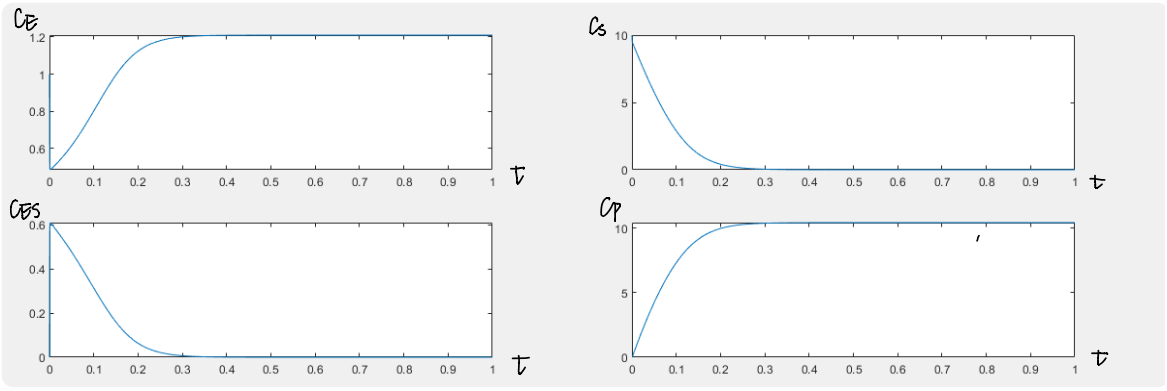
$\frac{dC_P}{dt} = k_3 C_{ES}$

2.2 $\frac{dC_E}{dt} = 750\, C_{ES} - 100\, C_E C_S$

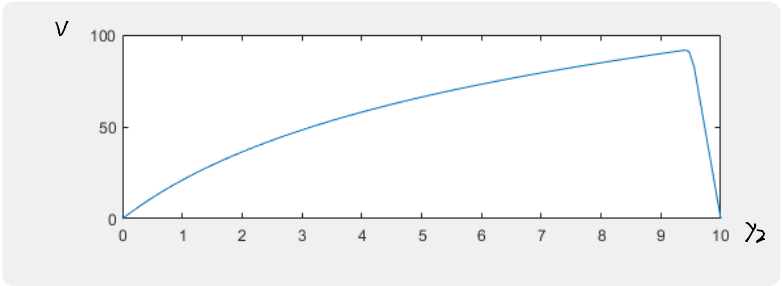
$\frac{dC_S}{dt} = 600\, C_{ES} - 100\, C_E C_S$

$\frac{dC_{ES}}{dt} = 100\, C_E C_S - 750\, C_{ES}$

$\frac{dC_P}{dt} = 150\, C_{ES}$



2.3



The maximum value Vm is 90.