

Implementation of the FitzHugh-Nagumo neuron model

Answer 1

Figure 1 : Model overview

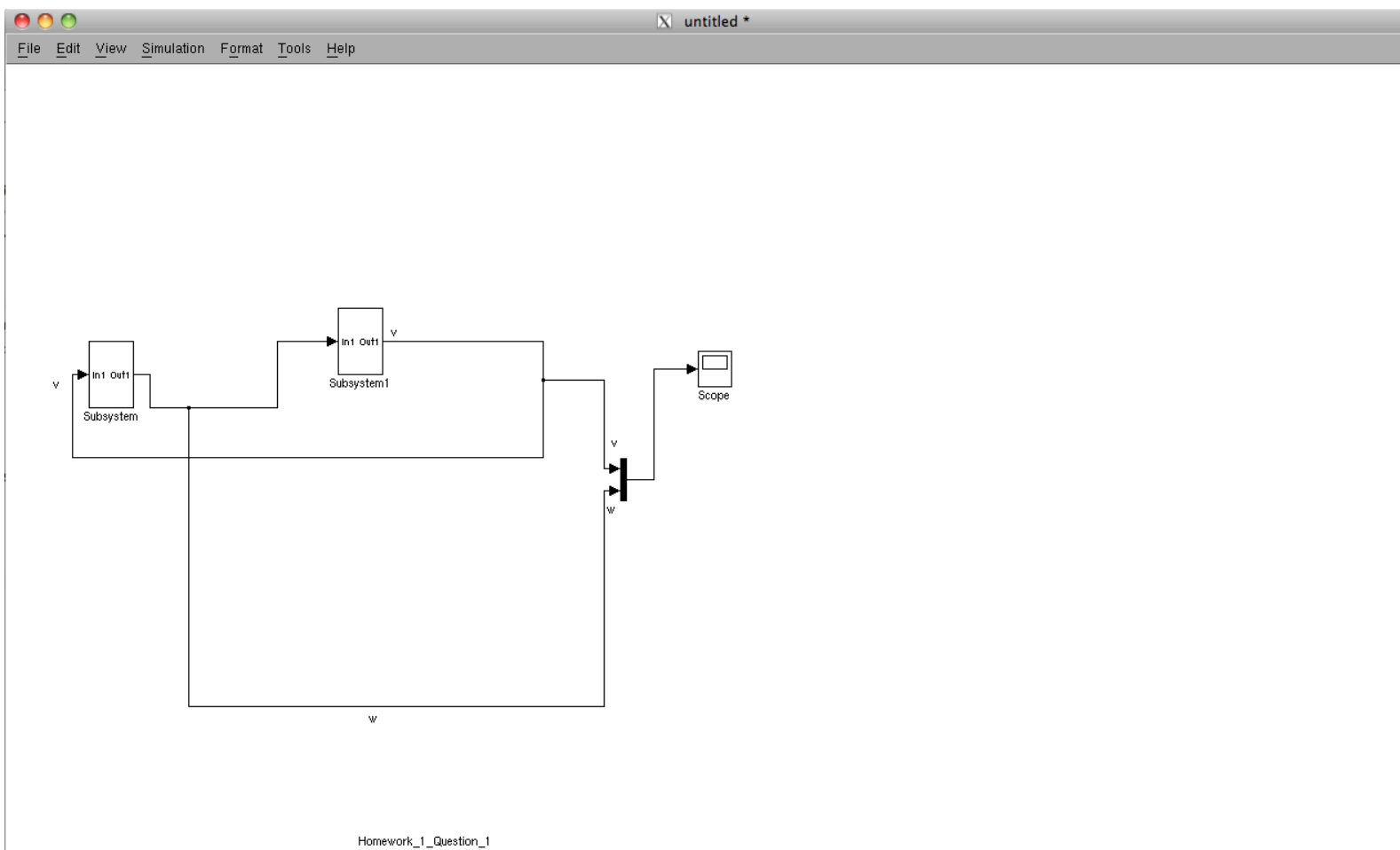


Figure 2 : Subsystem for $\frac{dw}{dt} = v - bw + a$

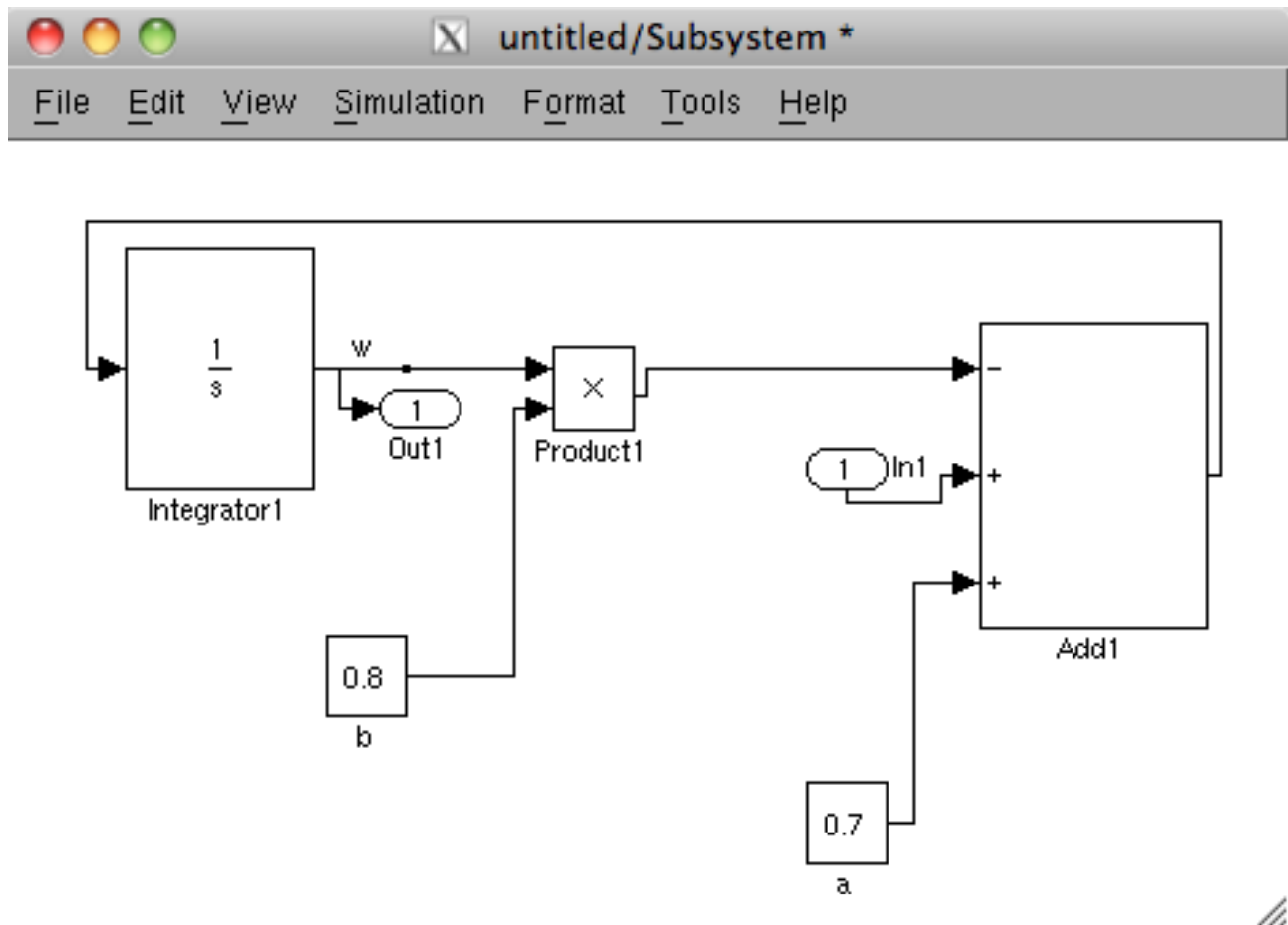
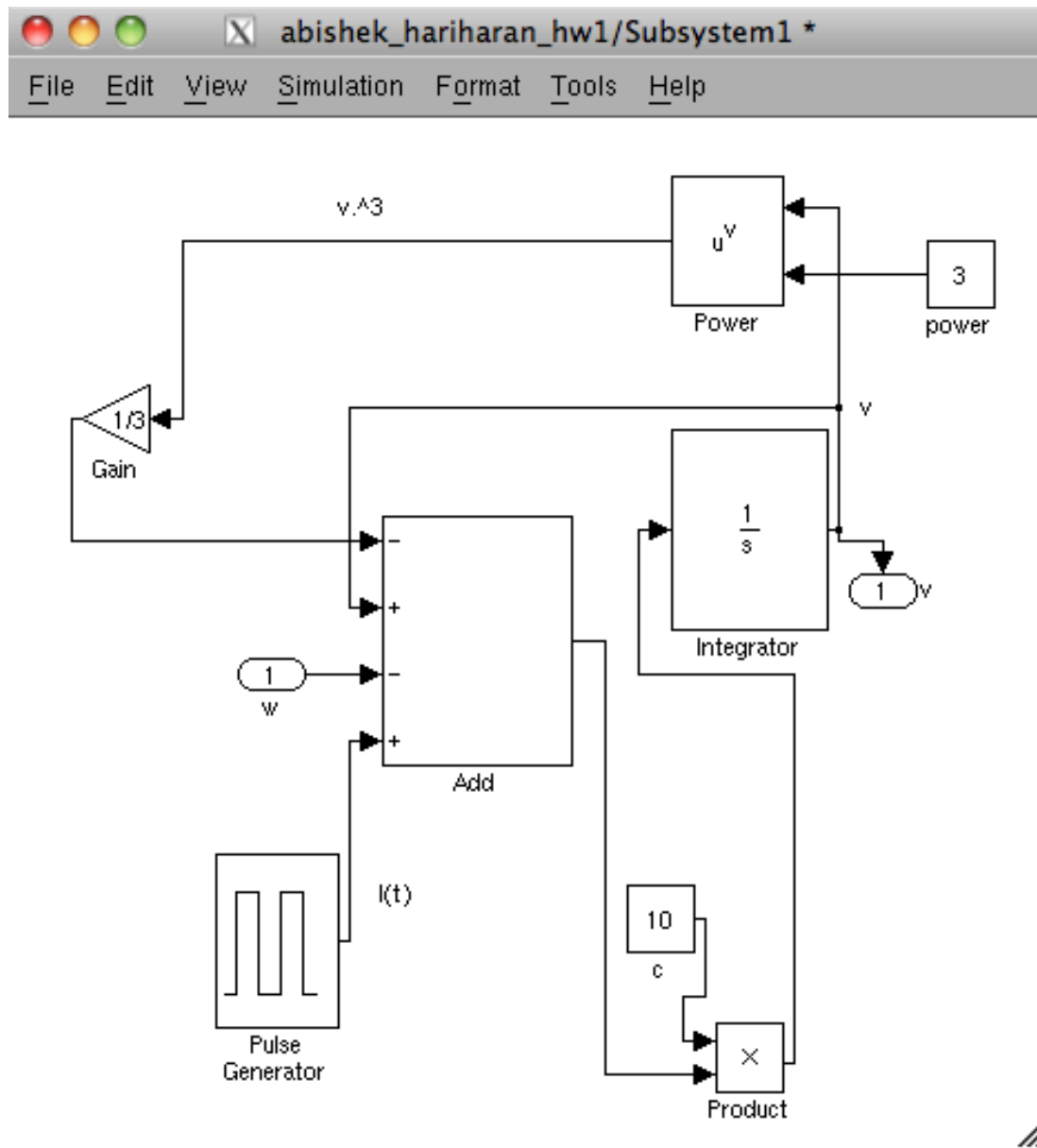
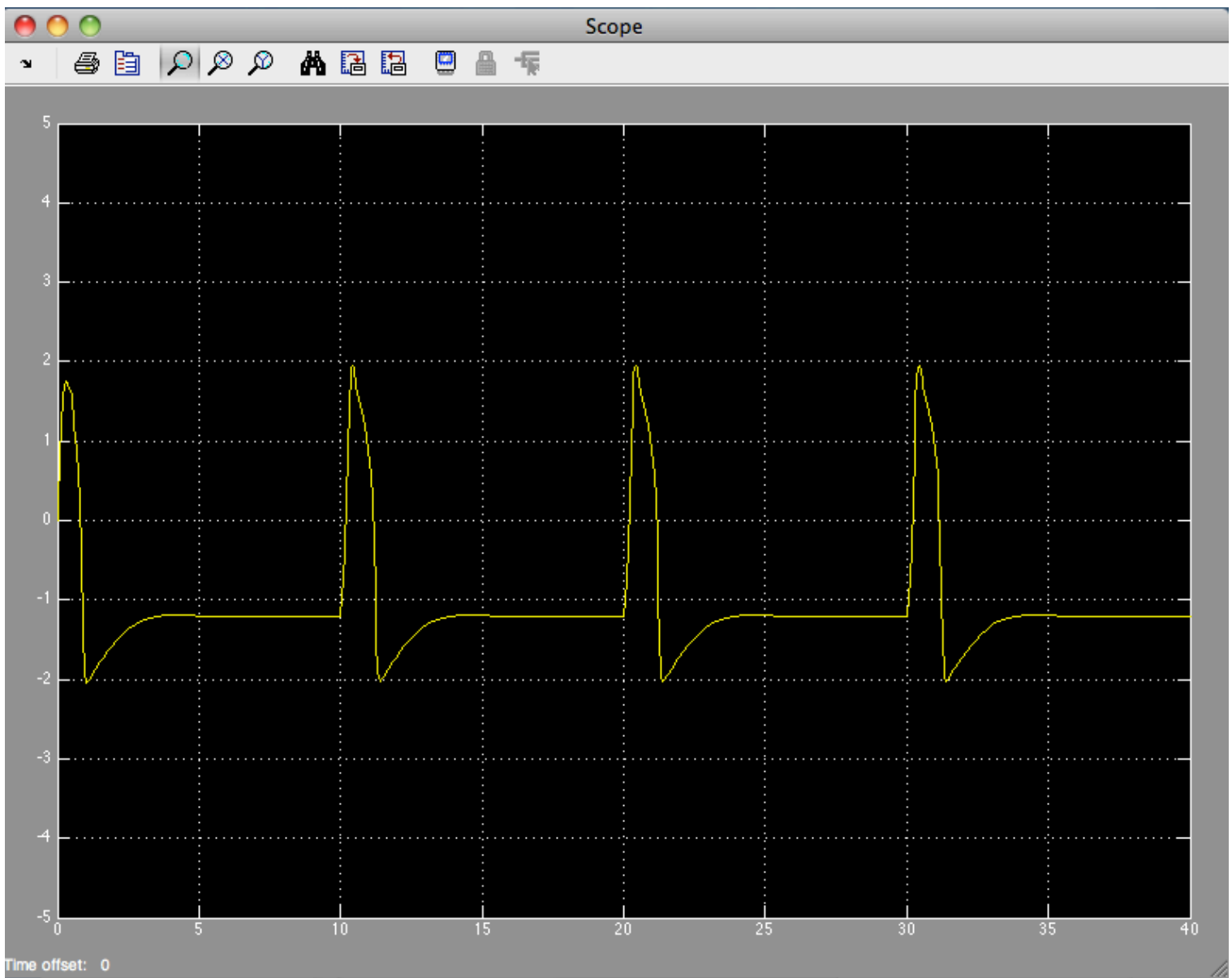


Figure 3: Subsystem1 for $\frac{dv}{dt} = c \left(-w + v - \frac{v^3}{3} + I(t) \right)$

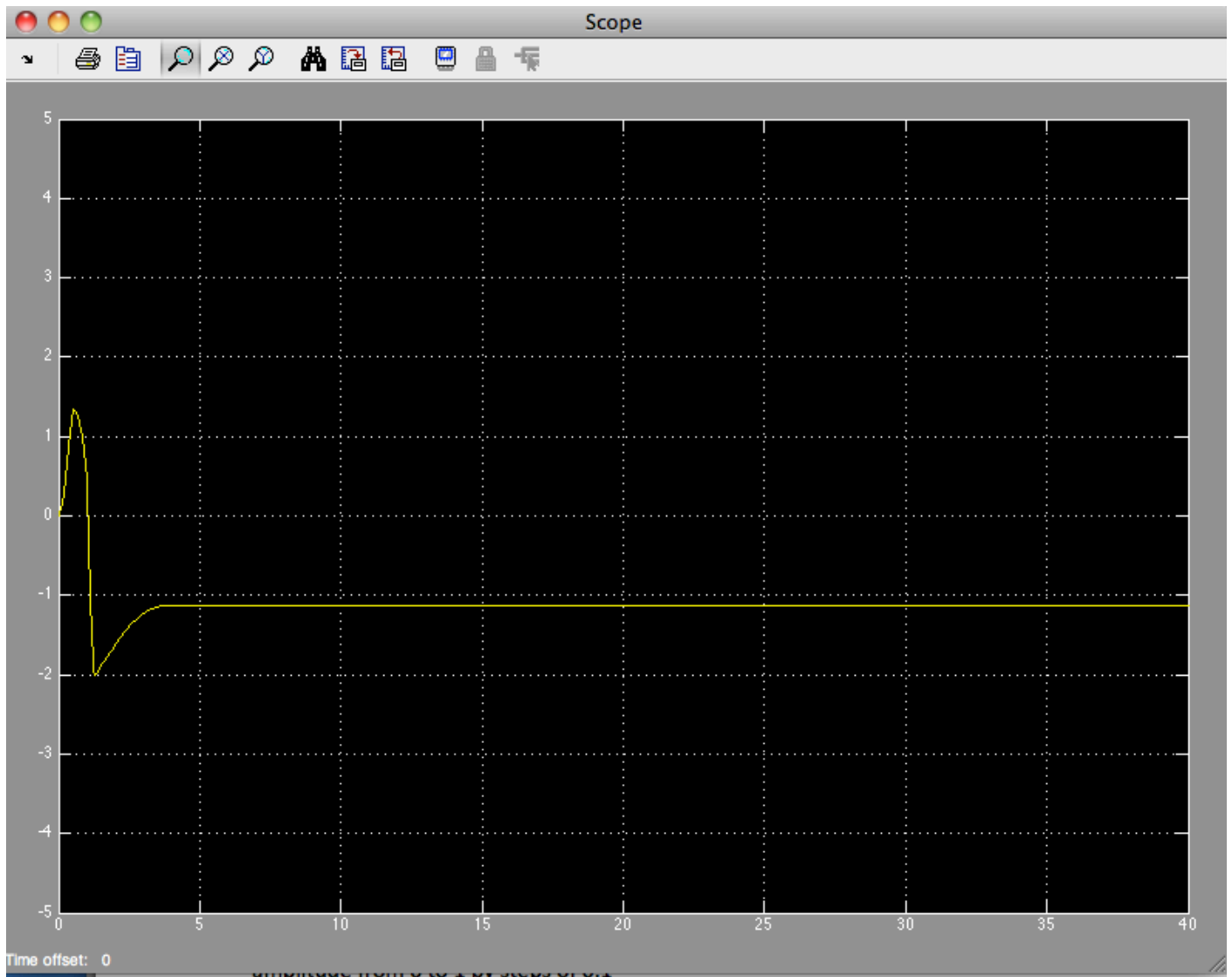


Answer 2:



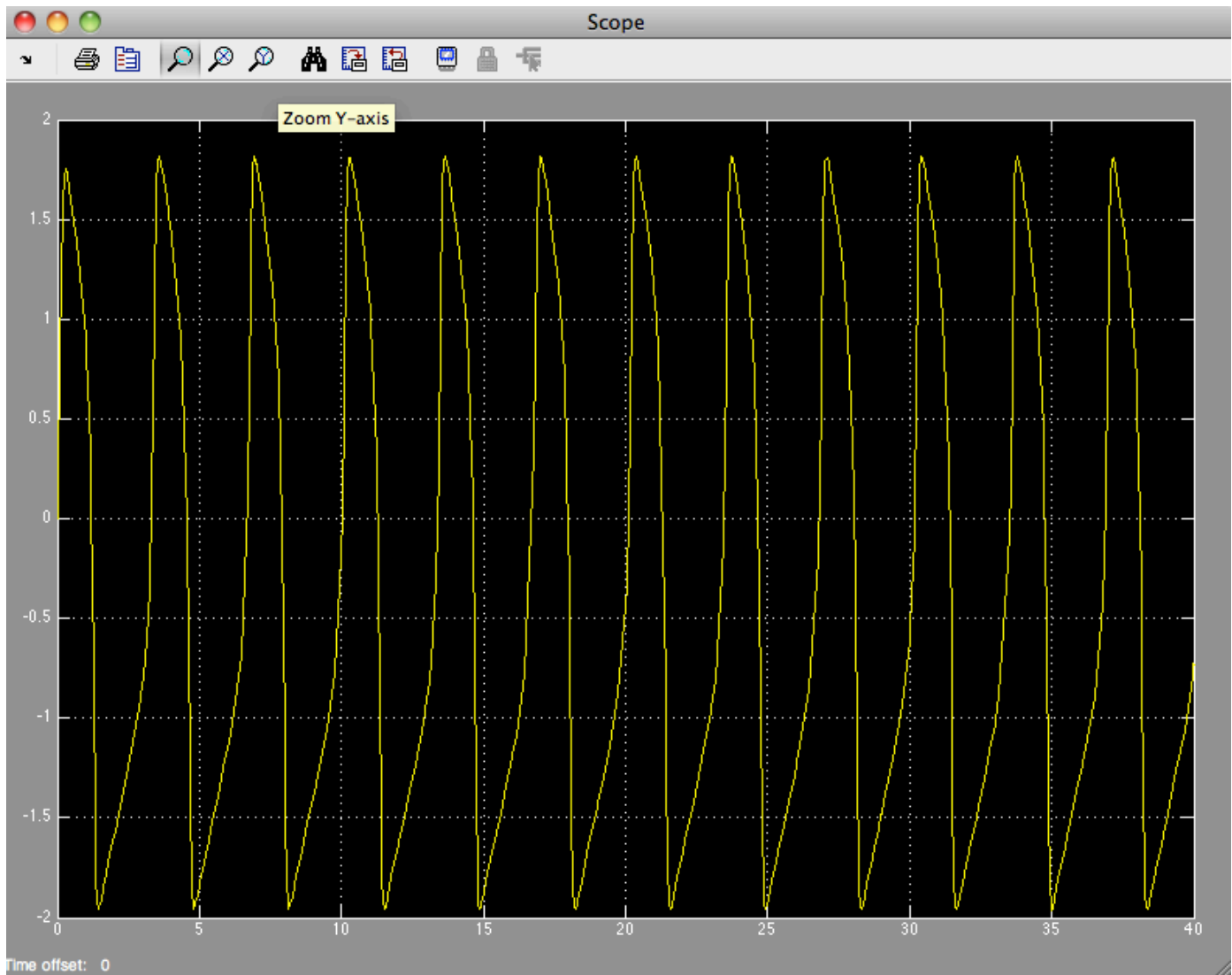
Answer 3:

1.Single Spike @ Amplitude: 0.2



Single spike at Amplitudes 0.1 and 0.2

2.Sustained Oscillations @ Amplitudes > 0.4



Sustained oscillations @ Amplitudes 0.4 ,0.5 ,0.6 ,0.7,0.8,0.9,1