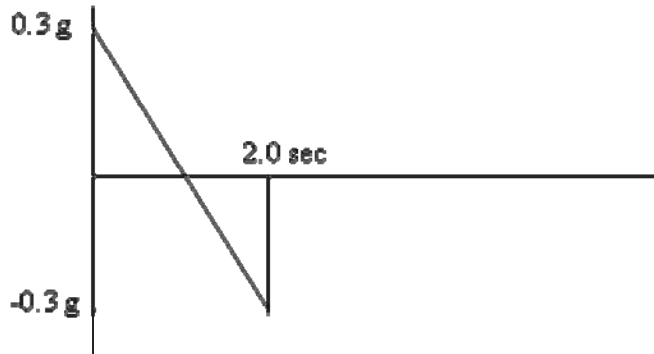


Homework – Lecture 16

Problem 16.1

The water tank shown has a mass of 2400 lb. It is mounted on a 20 ft high beam-column whose bending stiffness, EI is 500×10^6 lb-in². The base experiences a shock type acceleration over a duration of 2.0 sec which varies as shown: Assume $\zeta = 0.04$.



Using convolution in Matlab or Maple to solve for $x(t)$. Calculate the maximum displacement. Use a Simulink model to check these results.