EMTR-2019
Assignment #1

Due: 8:00pm, Friday, Feb. 7

Q1:
Problem 2.3 in the book (also calculate the time constant)

Q2:
Problem 2.17

Q3:
A machine part vibrates at a frequency of 100 Hz and displacements of 0.5mm from the equilibrium position.

(a) Calculate the peak velocity and acceleration.
(b) Discuss properties of displacement, velocity and accelerometers to measure vibration signals.

Q4:
If a vibration is expressed as $x(t) = 2\cos(4t + 0.2)$,

(a) determine the velocity and acceleration at the measurement location,
(b) Draw the graphs of the displacement, velocity and acceleration in Matlab over t = 0~5 sec.
(c) Describe the phase properties of these three signals.

Q5:
Problem 7.11

Q6:
Problem 7.12