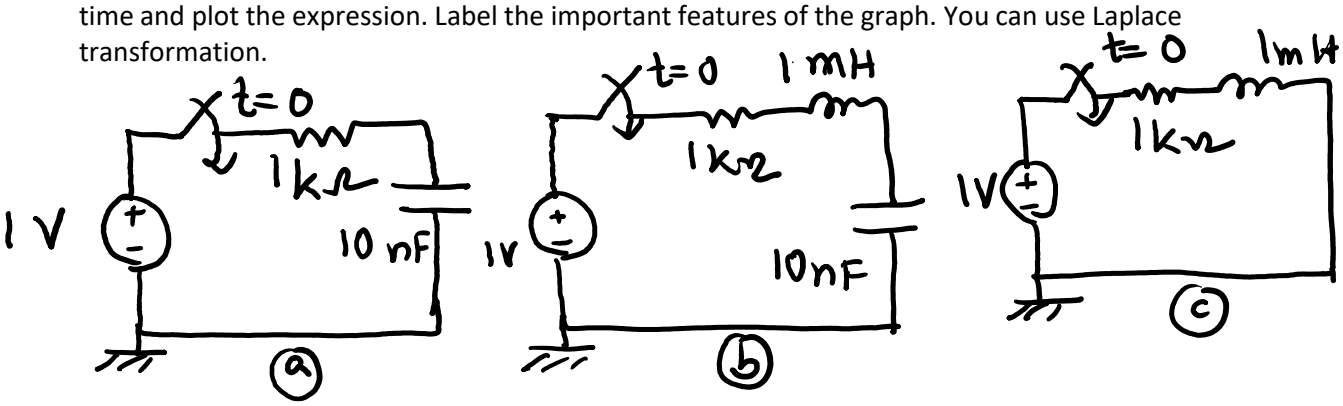
EE204 - Homework#0

Deadline-11-01-2019

03 January 2019

1. A voltage step input is given to the following circuits. Find out the expression for current as a function of time and plot the expression. Label the important features of the graph. You can use Laplace transformation.



2. An ac signal $v_i(t)$ = $\sin(2\pi 10^5 t+\pi/2)$ is given as an input for the above circuits instead of the step input. Find out the expression for the ac current flowing through each of the circuits.
3. Find out the expression for impedance as a function of frequency for all the above circuits. Plot the magnitude and phase of the impedance as a function of frequency for all of them. Consider two cases a) frequency in linear scale and b) frequency in log scale.
4. Simulate the curves in SPICE and check your results.