

ME451 Homework 2, Due date: 1/26/07 Friday

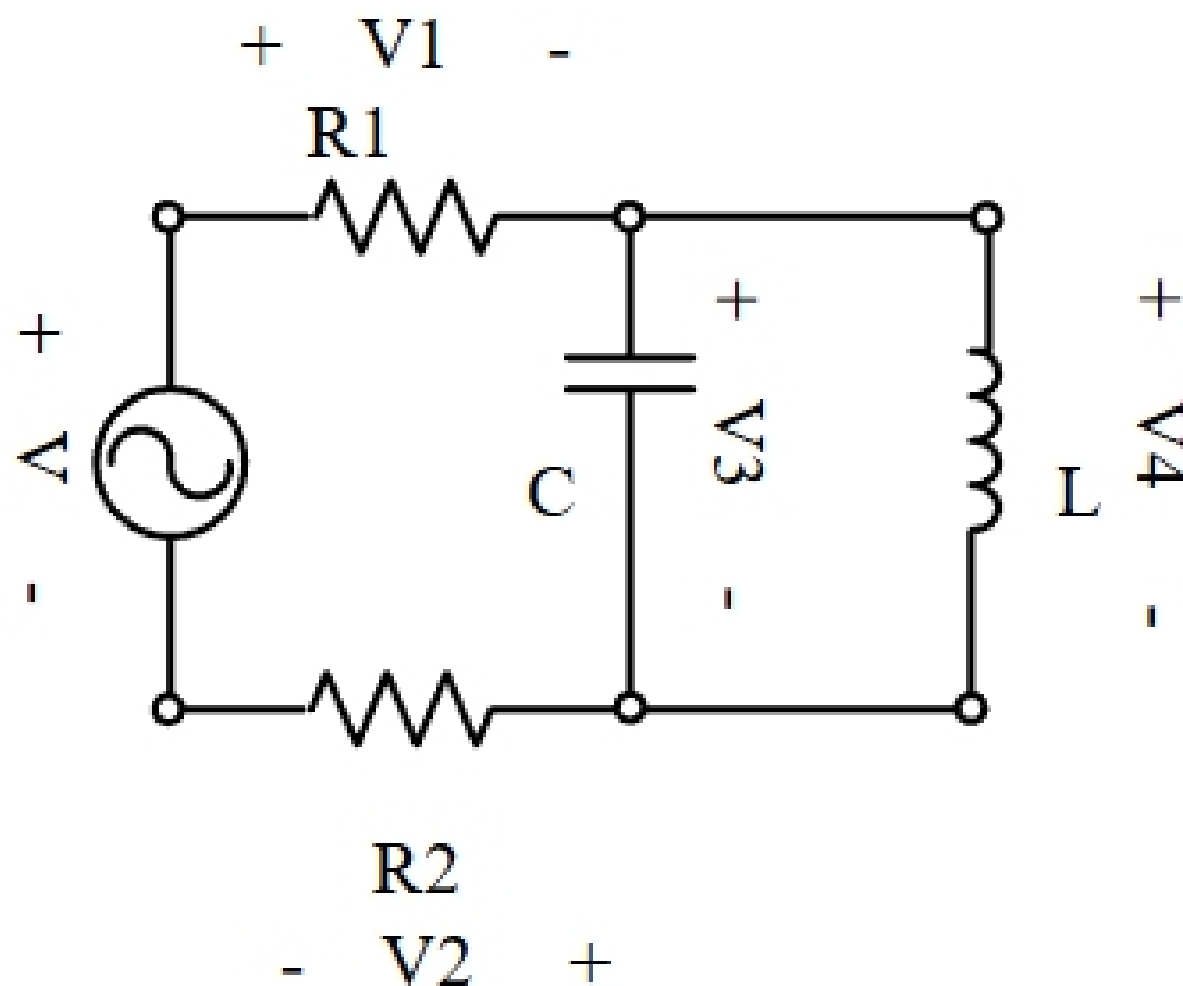
Problem 0. For the given transfer function $F_L(s) := \frac{1}{\tau s + 1}$ and the input signal $r(t) := \cos(\omega t)$,

- find the steady state output signal $y(t)$.
- Is this filter called a lowpass filter or a highpass filter? Why?

Problem 1. Do Problem 2.1 in the text book.

Problem 2. For the shown circuit, find the transfer functions between

- Input: $v(t)$, Output: $v_1(t)$,
- Input: $v(t)$, Output: $v_2(t)$,
- Input: $v(t)$, Output: $v_3(t)$,
- Input: $v(t)$, Output: $v_4(t)$



Problem 3. For the block diagram shown below, find the transfer function between the input $R(s)$ and the output $Y(s)$.

