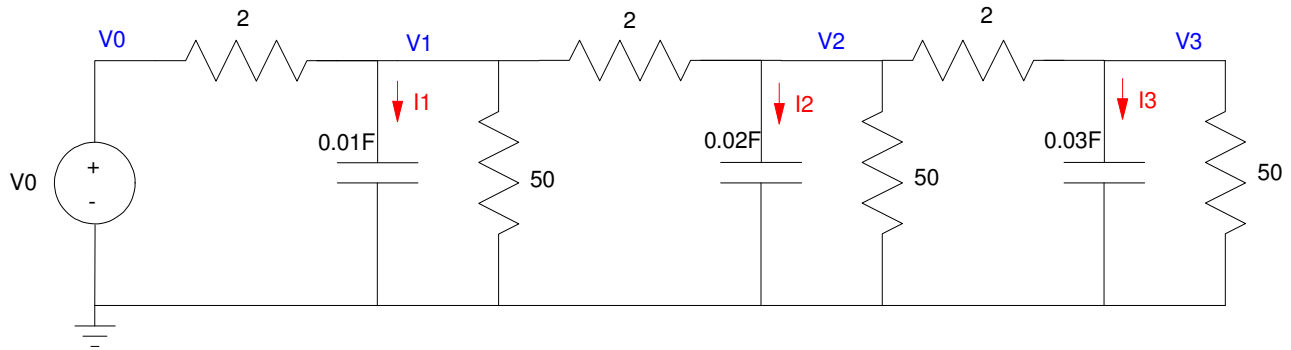


# ECE 343 - Homework #17

Circuit Analysis with Forcing Functions - Summer 2018

**Problem 1 -2)** Assume zero initial conditions



**Problem 1:** Find the transfer function from  $v_0$  to  $v_3$ .

- What is the differential equation which relates  $v_0$  and  $v_3$ ?

**Problem 2:** Find  $v_3(t)$  assuming

$$v_0(t) = u(t)$$

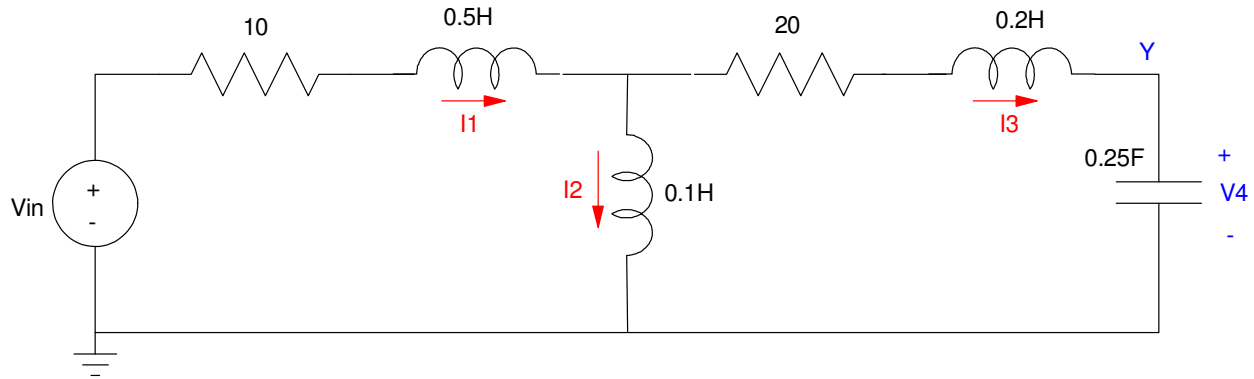
( note: a Matlab graph of  $v_3(t)$  vs time is OK )

**Problem 4:** Find  $v_3(t)$  assuming

$$v_0(t) = 3 \cos(2t)u(t)$$

( note: a Matlab graph of  $v_3(t)$  vs time is OK )

**Problem 4-6:** Assume zero initial conditions.



**Problem 4:** Find the transfer function from  $v_{in}$  to  $v_4$ .

- What is the differential equation which relates  $v_{in}$  and  $v_4$ ?

**Problem 5:** Find  $v_4(t)$  assuming

$$v_{in}(t) = u(t)$$

( note: a Matlab graph of  $v_4(t)$  vs time is OK )

**Problem 6:** Find  $v_4(t)$  assuming

$$v_{in}(t) = 3 \sin(2t)u(t)$$

( note: a Matlab graph of  $v_4(t)$  vs time is OK )