Name _____

EE 2240

Exam #3

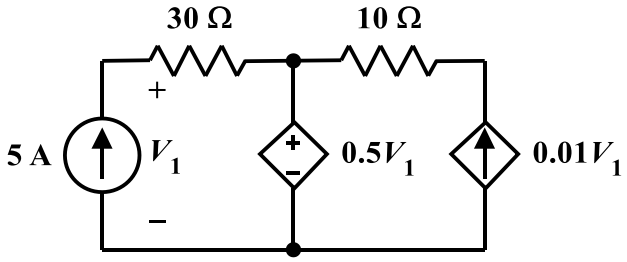
Wednesday, April 5, 2017

LIBR B07/B13 and TAB 115, 9:00AM – 9:50AM

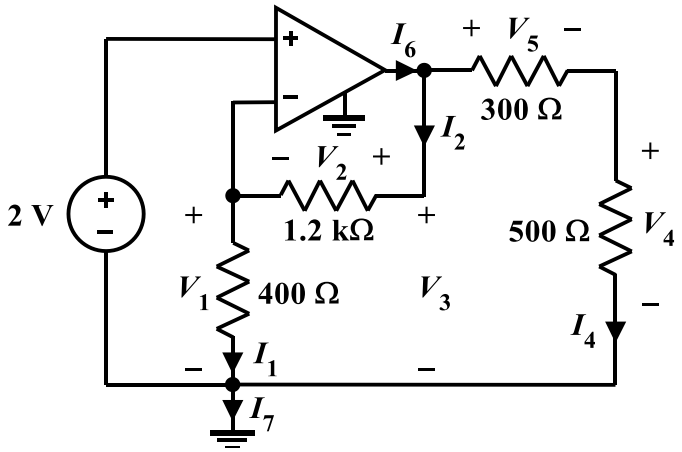
[closed book – one one-sided 8½"×11" page of notes and calculator allowed, nothing else]

Work must be shown in a neat and orderly fashion if you expect to receive partial credit.

1. Determine whether the dependent voltage source *delivers* or *absorbs* power, and how much.



2. The Op Amp shown in the circuit below is ideal.



Determine the following. ***Show your work*** and indicate proper units for each answer.

a. $V_1 =$ _____

b. $I_1 =$ _____

c. $I_2 =$ _____

d. $V_2 =$ _____

e. $V_3 =$ _____

f. $V_4 =$ _____

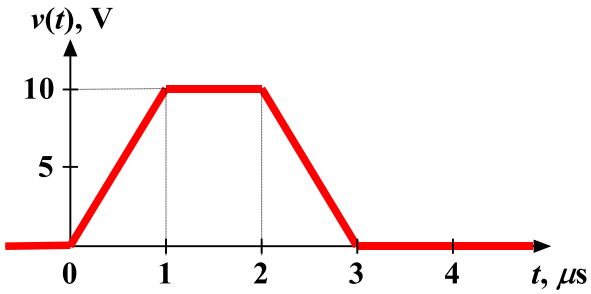
g. $I_4 =$ _____

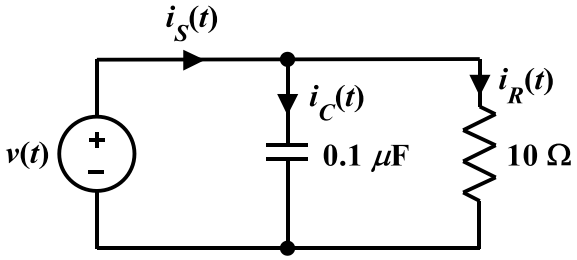
h. $V_5 =$ _____

i. $I_6 =$ _____

j. $I_7 =$ _____

3. Consider the circuit shown below. The voltage of the independent voltage source is given graphically, as shown.





a. Accurately sketch the current through the capacitor, $i_C(t)$.

b. Accurately sketch the current through the resistor, $i_R(t)$.

c. Accurately sketch the current through the independent voltage source, $i_S(t)$.

4. If $v_1(0) = 10\,\text{V}$, determine $v_2(t)$ for $t \geq 0$.