

Desk Copy

ECE 301
Fall Semester, 2005
Test #4

wlg Version B

Name _____
Print (last, first)

Work the exam on your own engineering paper. Work on one side of your paper only. Attach your work to the back of this exam sheet and staple in the top left hand corner. Each problem counts 20%.

- (1)) You are given the voltage waveform of Figure 3. Find the RMS value of the voltage, $v(t)$.

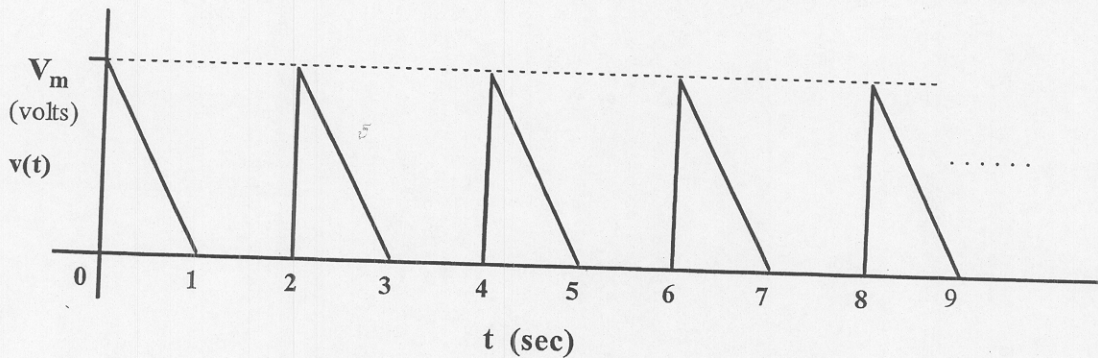


Figure 1: Circuit for problem 1.

- (2) Determining power factor.

- (a) You are given the load impedance shown in Figure 2a. Determine the power factor, including the leading or lagging part.

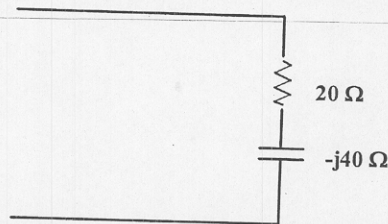


Figure 2a: Diagram for problem 4a.

- (b) You are given a load impedance that draws the complex power shown in Figure 2b. Determine the power factor, including leading or lagging part.

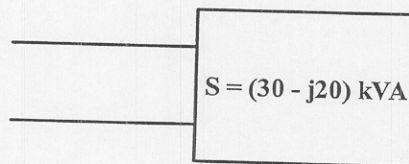


Figure 2b: Diagram for problem 2b.

(3) You are given the circuit of Figure 3. Find the phasor voltage V_1 using nodal analysis.

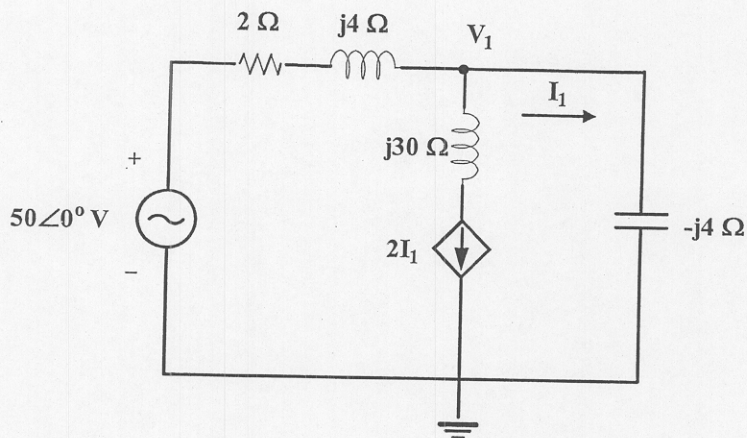


Figure 3: Circuit for problem 3.

- (4) You are given the AC circuit shown below.
- Determine the complex power supplied by the source.
 - Determine the power factor of the source (include lead or lag).

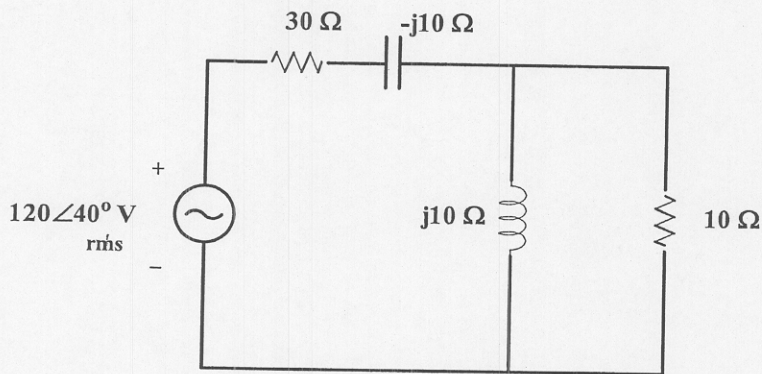


Figure 4: Circuit for problem 4

(5) You are given the circuit of Figure 5. Find the phasor current I .

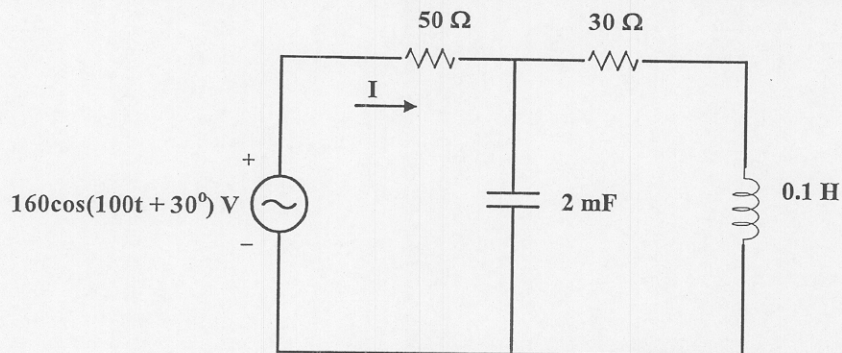


Figure 5: Circuit for problem 5.