

## ECE 210 — Exam # 4

Estimated time for completion: <1 hour  
26 April 2013

### Rules of the Exam

**Rule 1:** The examination period begins at 1:10pm on Friday 26 April 2013 and ends at 2:00pm on Friday 26 April 2013.

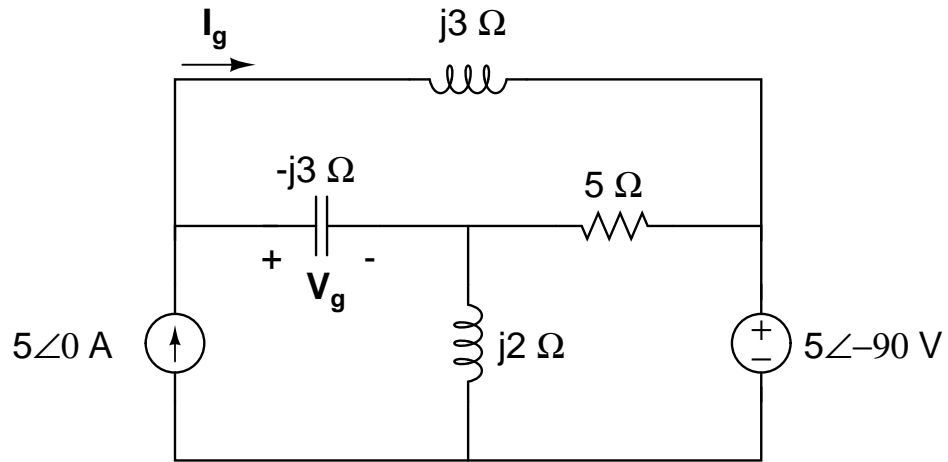
**Rule 2:** There are three problems plus one problem for extra credit.

**Rule 3:** The exam is closed book and closed notes but you may use a 4" x 6" sheet of paper with notes during the exam. You may use a calculator.

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Name

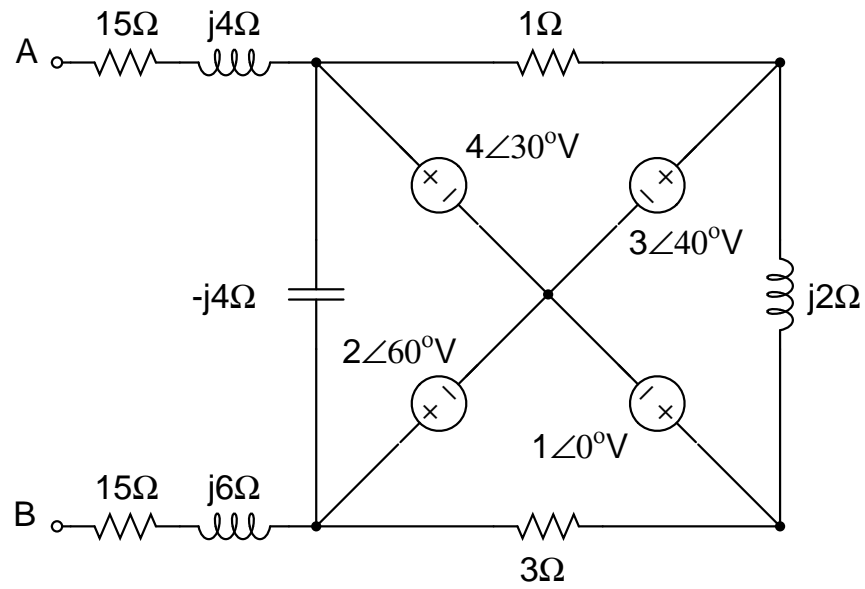
**Problem 1.** (7 pts.) Consider the circuit below:



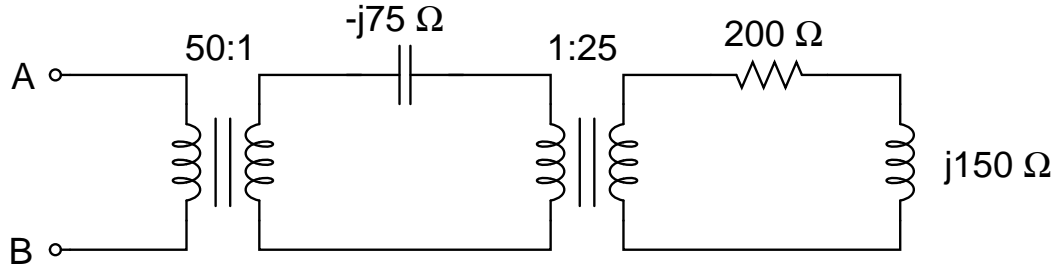
What is the phasor voltage  $\mathbf{V}_g$ ? \_\_\_\_\_

What is the phasor current  $\mathbf{I}_g$ ? \_\_\_\_\_

**Problem 2.** (7 pts.) Draw the Thévenin Equivalent circuit at terminals “A” and “B” for the circuit below:



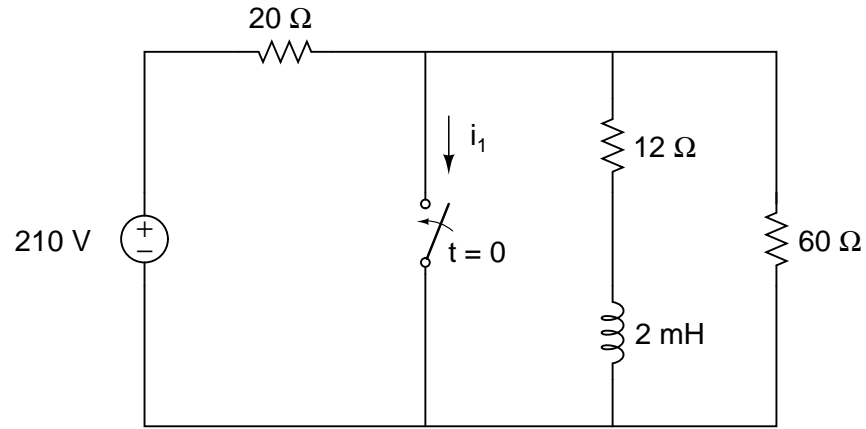
**Problem 3.** (6 pts.) In the circuit below, the transformers are ideal.



Calculate the input impedance  $Z_{AB}$  \_\_\_\_\_

**Extra Credit.** (5 pts.)

In the circuit below, the switch has been open for a very long time and closes at  $t = 10\text{ms}$ .



What is  $i_1(10^-)\text{ms}$ ? \_\_\_\_\_

What is  $i_1(10^+)\text{ms}$ ? \_\_\_\_\_

Write an equation for  $i_1(t)$  for  $t \geq 10^+\text{ms}$

Extra Page 1

Extra Page 2