



RUTGERS

School of Engineering
Department of Electrical and Computer Engineering

332:221

Principles of Electrical Engineering I
Quizlette 4

Fall 2012

USING A CALCULATOR WILL SLOW YOU DOWN! Final answers must appear in the appropriate box.
Show your work outside the box.

NAME:

LAB SECTION:

1. **Basic Stuff:** Please answer the following questions about FIGURE 1.

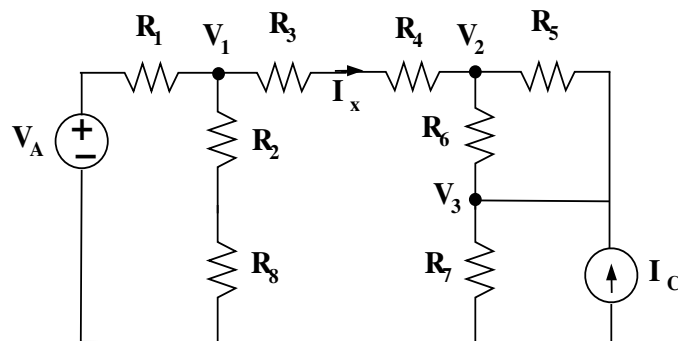


Figure 1: Circuit diagram for problem 1

(a) (1 pt) R_3 and R_4 are in parallel:

☐

(b) (1 pt) R_6 and R_5 are in parallel:

☐

(c) (1 pt) Given V_1 , what is the voltage across resistor R_8 ?

(d) (1 pt) Given I_x what is the current through resistor R_6 ?

2. Getting Cute:

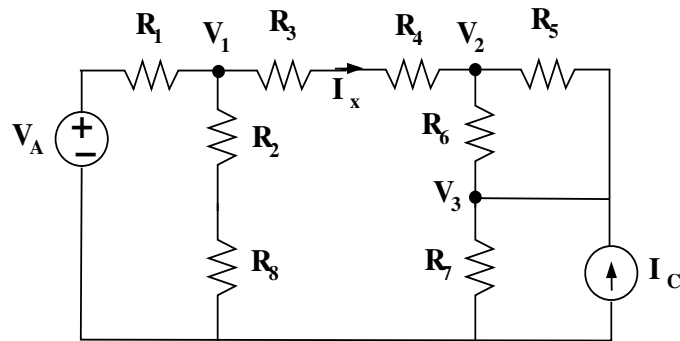


Figure 2: Circuit diagram for problem 2

- (a) (3 pts) Write down the three governing equations using the node voltage method with voltages V_1 , V_2 and V_3 in FIGURE 2

node V_1 :

node V_2 :

node V_3 :

- (b) (3 pts) FIGURE 2 has four meshes. Write down the THREE governing equations using the mesh current method (define all mesh currents running clockwise). **HINT:** one of the mesh currents must be $-I_C$.

mesh i_1 :

mesh i_2 :

mesh i_3 :