Name _____ Date _____

Honors Physics Electric Circuits WS #9H

Period _____ Mrs. Nadworny

RC Circuits

Directions: Read online textbook pages 746 – 751. Solve the following problems using the GUESS method and proper significant figures. Be sure to show ALL work.

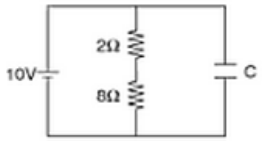
1. A capacitor is made of two charged parallel plates of area A that are separated by a distance d, and it has a capacitance of C.
    a. What happens to the capacitance when the area of the plates is tripled?

    b. What happens to the capacitance when the distance is doubled?

2. A 12 V battery is connected in series to a 3 ohm resistor and an initially uncharged capacitor.
    a. Determine the current in the circuit immediately after the battery is connected to the resistor and capacitor.

    b. Determine the current in the circuit a long time later.

3. A circuit is set up so a 2 ohm and an 8 ohm resistor are in series with each other and in parallel with a capacitor and a 10 volt cell, as shown.



    a. Determine the current in the 2 ohm resistor immediately after the battery is connected to the circuit.

    b. Determine the current in the 2 ohm resistor a long time later.