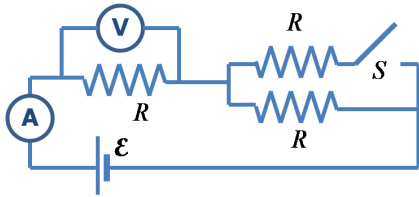


Physics 1214, Homework #4 (due 9/26)

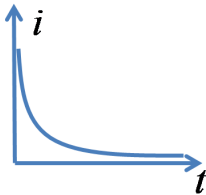
M1 When the switch S is closed, the reading of the voltmeter V will

- A. increase.
- B. decrease.
- C. stay the same.



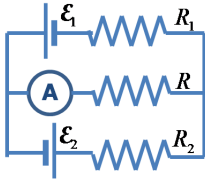
M2 The graph shows the current in a resistor-capacitor circuit as a function of time. From this graph, we can tell that

- A. the capacitor must be charging.
- B. the capacitor must be discharging.
- C. the capacitor could be either charging or discharging, but we cannot tell which it is.

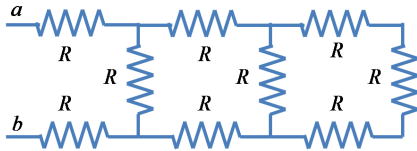


Problems

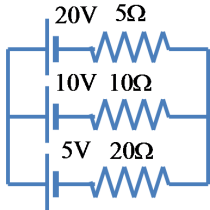
- P1 The circuit shown below is used to measure the temperature at the location of resistor R_2 . If $\mathcal{E}_1 = \mathcal{E}_2 = 12\text{ V}$, $R = 10\ \Omega$, $R_1 = 100\ \Omega$, and $R_2 = 100\ \Omega[1 + 0.005(T - T_0)]$, what will be the current through the ammeter if the temperature increases by 10°C with respect to the reference temperature T_0 ?



- P2 Find the equivalent resistance of the network shown below. Assume $R = 10\ \Omega$.



- P3 Find the current through each resistor for the circuit shown below.



- P4 Find the time constant for the circuit shown below.

