

### **Quiz 20.1A**

An unknown capacitor and a 33500 Ohm resistor are connected in series with a 78.0 Volt power source. At  $t = 0.00$  s, a switch is closed to complete the circuit, and the capacitor begins to charge. A student determines that the voltage drop across the resistor after 1.33 seconds is 38.0 Volts.

- a) What is the current in the circuit at this time?
- b) What is the time constant of this circuit?
- c) What is the capacitance of the capacitor in this circuit?
- d) At  $t = 1.33$  seconds, what is the charge on the capacitor?