S-28-2

A 9.00 volt battery delivers 117 mA when connected to a 72.0 Ω load. Determine the internal resistance of the battery.

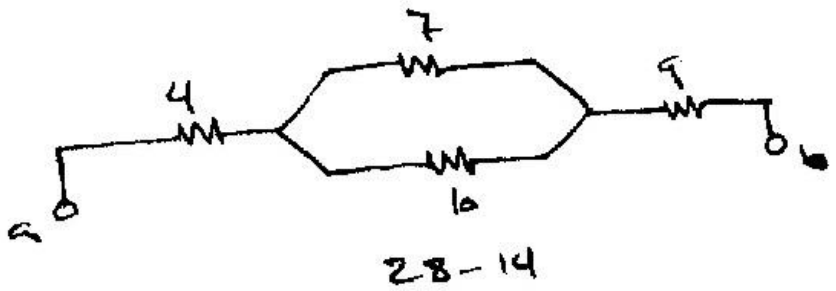
S-28-9

Two 1.5 volt batteries –with their positive terminals in the same direction- are inserted in series into the barrel of a flashlight. One battery has an internal resistance of 0.255 Ω and the other an internal resistance of 0.153 Ω. When the switch is closed, a current of 600 mA occurs in the lamp.

a- What is the lamps resistance?
b- What fraction of the power dissipated is dissipated in the batteries?

S-28-14

Find the equivalent resistor in the circuit shown in the figure. If V_{ab} is 34 volts, what is the current through each resistor?

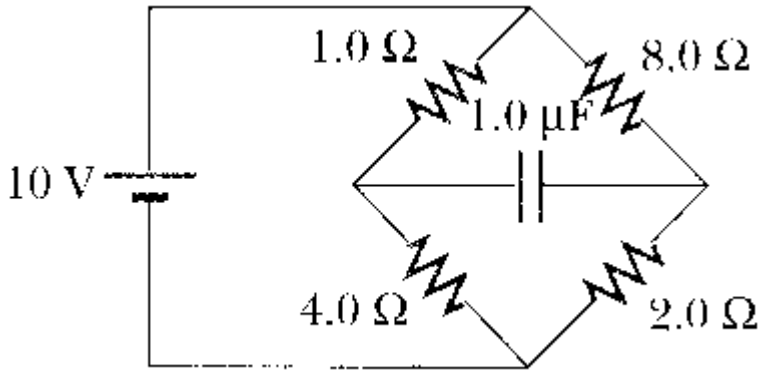


S-28-47

The circuit in the figure has been connected for a long time.

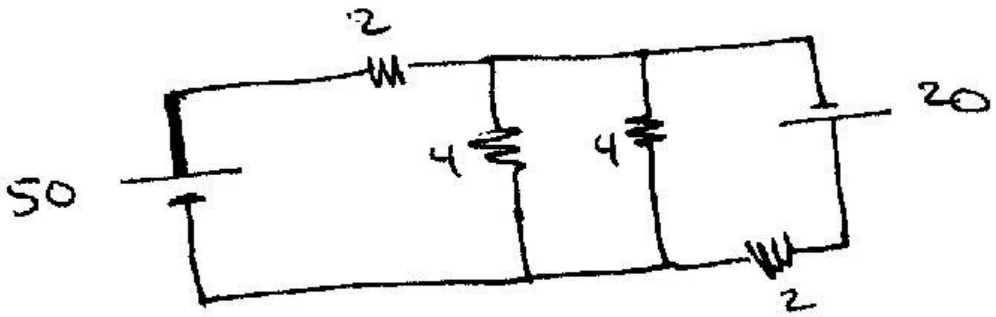
a- What is the voltage across the capacitor?

b- If the battery is disconnected, how long does it take the capacitor to discharge to 1/10 of its initial voltage?



S-28-39

Calculate the power dissipated in each resistor in the figure.

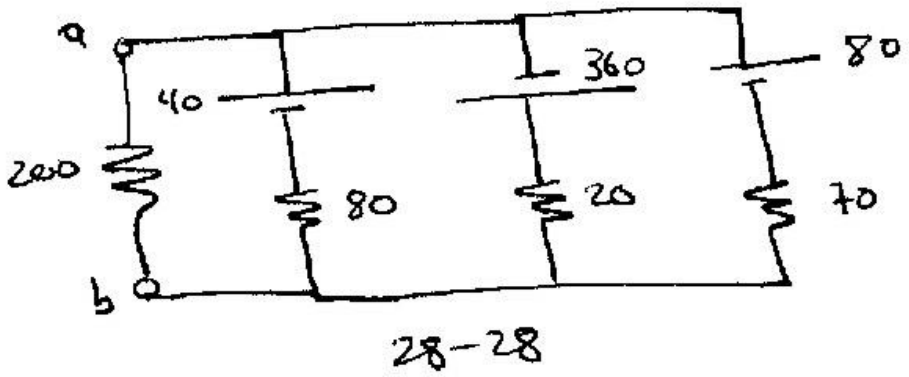


S-28-28

In the circuit of the figure,

a- find the current through each resistor.

b- find the voltage across the 200 W resistor.



S-28-21

Find the potential V_{ab}.

Extra

A capacitor in an RC (R = 2 Ω, C = 5 μF) circuit is initially uncharged. A 9 volt battery is attached in series to the resistor. How much charge is at the capacitor plate one time constant after the switch is closed?