Physics Department
Grade 12 advanced

Um Kolthoom School
Eman Jaradat

Chapter 6: Direct Current and Resistance

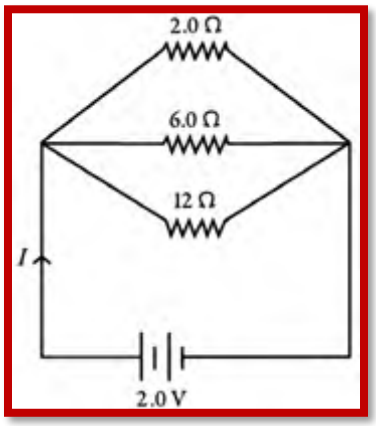
التسليم يوم الاثنين 2\24 (home work)

****

1) Three resistors having resistances of 4.0 Ω, 6.0 Ω, and 10.0 Ω are connected in parallel. If the combination is connected in series with an ideal 12-V battery and a 2.0-Ω resistor, what is the current through the 10.0-Ω resistor?

A) 0.59 A B) 2.7 A C) 6.4 A D) 11.2 A Answer: A

8) Three resistors are connected across an ideal 2.0-V DC battery as shown in the figure.



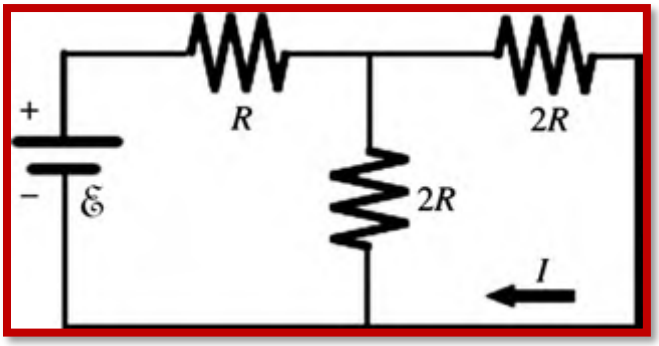
(a) At what rate does the battery supply energy to the resistors?

(b) At what rate is heat produced in the 6.0-Ω resistor?

Answer: (a) 3.0 W (b) 0.67 W

For the circuit shown in the figure, $I = 0.50$ A and $R = 12\ \Omega$. What is the value of the emf ε?

A) 18 V B) 24 V C) 6.0 V D) 12



Answer: B

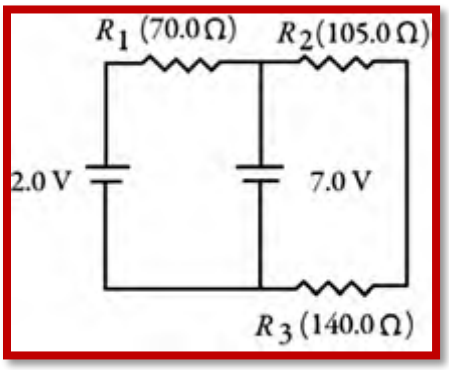
When a 20.0-ohm resistor is connected across the terminals of a 12.0-V battery, the voltage across the terminals of the battery falls by 0.300 V. What is the internal resistance of this battery?

A) 3.60 Ω B) 1.56 Ω C) 0.98 Ω D) 0.30 Ω E) 0.51 Ω Answer: E

For the circuit shown in the figure, what is the current through resistor *R*1?

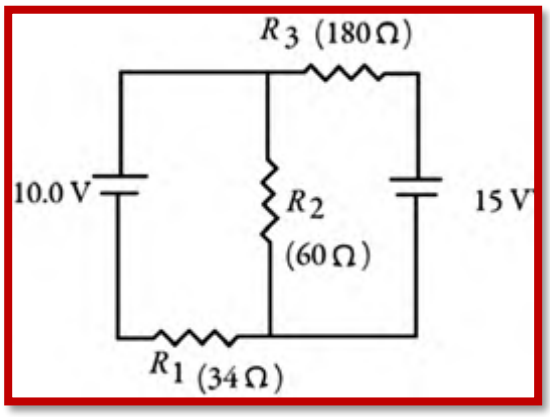
A) 0.071 A B) 0.13 A C) 0.029 A D) 0.016 A

Answer: A

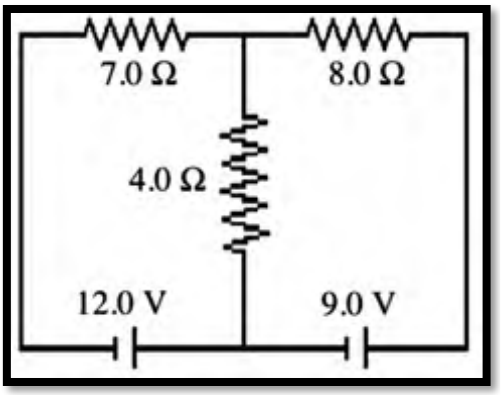


For the circuit shown in the figure, what is the current through resistor *R*3?

A) 0.043 A B) 1.5 A C) 0.028 A D) 0.086 A Answer: A



For the circuit shown in the figure, determine the current in



(a) the 7.0-Ω resistor.

(b) the 8.0-Ω resistor.

(c) the 4.0-Ω resistor.

Answer: (a) 1.6 A (b) 1.3 A (c) 0.28 A

A galvanometer has an internal resistance of 100 Ω and deflects full-scale at 2.00 mA. What size resistor should be added to the galvanometer to convert it to a milliammeter capable of reading up to 4.00 mA, and how should this resistor be connected to the galvanometer?

A) 50.0 Ω in series with the galvanometer B) 50.0 Ω in parallel with the galvanometer

D) 100 Ω in series with the galvanometer E) 100 Ω in parallel with the galvanometer

Answer: E