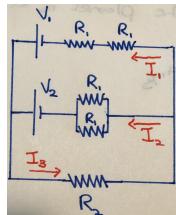

1. (1 point)

Student Name: Arfaz Hossain

Student ID: V00984826

Two batteries with terminal voltages $V_1 = 100.5\text{V}$ and $V_2 = 11.45\text{V}$ are attached to a number of resistors as shown in the diagram.



The resistors labelled R_1 all have resistance 16.32Ω and the resistor labelled R_2 has a resistance 91.5Ω .

(The input below will accept answers with no more than 1

What are the three currents I_1 , I_2 and I_3 ?

Use a sign convention where the values are positive if they go in the same direction as the arrows in the diagram and negative if the current goes in the opposite direction.

$I_1 = \underline{\hspace{2cm}}$ A

$I_2 = \underline{\hspace{2cm}}$ A

$I_3 = \underline{\hspace{2cm}}$ A

UVic Problem ID: 34291611324924130

Student Name: Arfaz Hossain

Student ID: V00984826

Correct Answers:

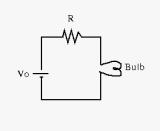
- 2.242
 - -1.944
 - 0.298
-

2. (1 point)

Student Name: Arfaz Hossain

Student ID: V00984826

A light bulb and a resistor are connected in a simple circuit to a battery with terminal voltage $V_0 = 111.1\text{V}$.



The light bulb can be thought of as a resistor that radiates energy at a rate of 82.9W .

The potential difference across the resistor is $\Delta V = 23.4\text{V}$.

(The input below will accept answers with no more than 1

What is the current through the light bulb?

$\underline{\hspace{2cm}}$ A

What is the resistance of the resistor?

$\underline{\hspace{2cm}}$ Ω

UVic Problem ID: 34291611324924130

Student Name: Arfaz Hossain

Student ID: V00984826

Correct Answers:

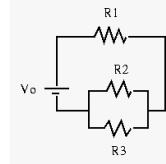
- 0.945
 - 24.755
-

3. (1 point)

Student Name: Arfaz Hossain

Student ID: V00984826

A circuit consists of a battery with terminal voltage V_0 connected to three resistors as shown in the diagram.



The values of the resistances are $R_1 = 30.1\Omega$, $R_2 = 125.5\Omega$, and $R_3 = 88.5\Omega$.

The rate of energy dissipation in R_2 is $P_2 = 69.9\text{W}$.

(The input below will accept answers with no more than 1
What is the current through R_1 ?

$\underline{\hspace{2cm}}$ A

What is the potential difference V_0 ?

$\underline{\hspace{2cm}}$ V

UVic Problem ID: 34291611324924130

Student Name: Arfaz Hossain

Student ID: V00984826

Correct Answers:

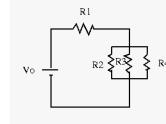
- 1.805
 - 147.981
-

4. (1 point)

Student Name: Arfaz Hossain

Student ID: V00984826

A circuit consists of a battery with terminal voltage $V_0 = 43.1\text{V}$ connected to four resistors as shown in the diagram.



The values of the resistances are $R_1 = 33.7\Omega$, $R_2 = 108.1\Omega$, $R_3 = 90.7\Omega$, and $R_4 = 61.9\Omega$.

(The input below will accept answers with no more than 1

What is the magnitude of the potential difference across R_2 ?

$\underline{\hspace{2cm}}$ V

What is the current going through R_4 ?

$\underline{\hspace{2cm}}$ A

UVic Problem ID: 34291611324924130

Student Name: Arfaz Hossain
Student ID: V00984826

Correct Answers:

- 19.347
- 0.313

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