HW due 6/20

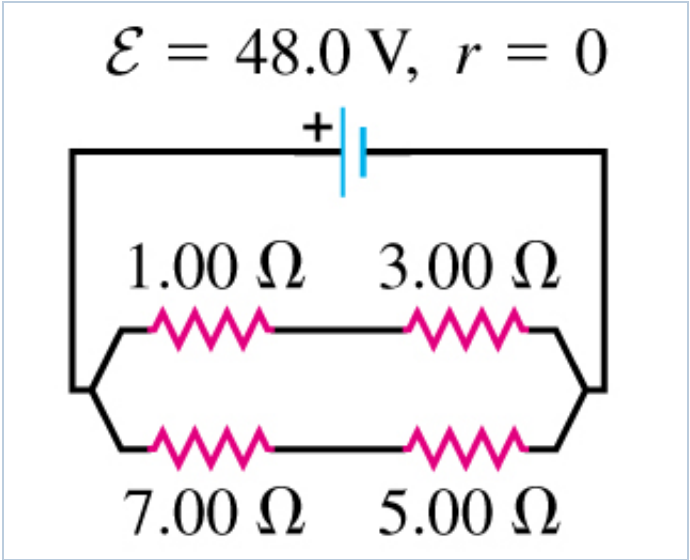
Due: 7:00am on Monday, June 20, 2016

To understand how points are awarded, read the Grading Policy for this assignment.

Exercise 26.14

Part A

Compute the equivalent resistance of the network in the figure The battery has negligible internal resistance.



ANSWER:

R_{eq} = 3.00 Ω

Correct

Part B

Find the current in 1.00Ω resistor.

ANSWER:

I = 12.0 A

Correct

Part C

Find the current in 3.00Ω resistor.

ANSWER:

I = 12.0 A

Correct

Part D

Find the current in 5.00Ω resistor.

ANSWER:

I = 4.00 A

Correct

Part E

Find the current in 7.00Ω resistor.

ANSWER:

I = 4.00 A

Correct

Problem 25.64

A person with body resistance between his hands of 10 $\mathrm{k\Omega}$ accidentally grasps the terminals of a 16-kV power supply.

Part A

If the internal resistance of the power supply is 2500 Ω , what is the current through the person's body?

Express your answer using two significant figures.

ANSWER:

I = 1.3 A

Correct

Part B

What is the power dissipated in his body?

Express your answer using two significant figures.

ANSWER:

P = 1.6×10^{4} W

Correct

Part C

If the power supply is to be made safe by increasing its internal resistance, what should the internal resistance be for the maximum current in the above situation to be $I_{\max} = 1.00\ \mathrm{mA}$ or less?

Express your answer using two significant figures.

ANSWER:

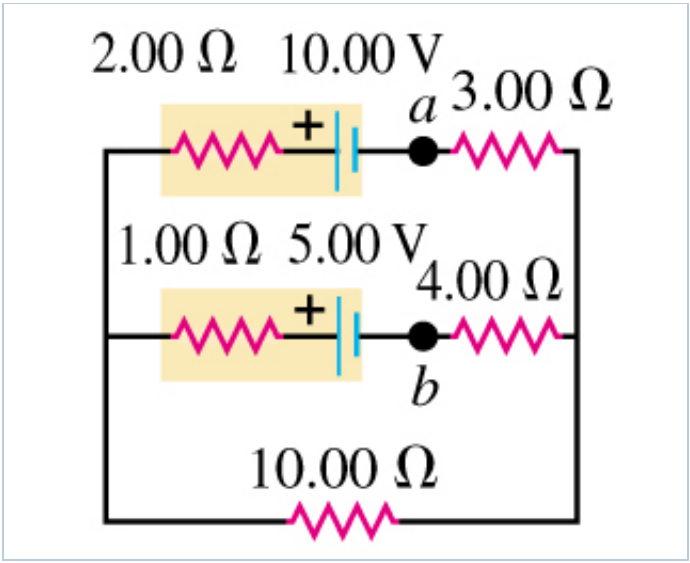
r = 1.6×10^{7} Ω

Correct

Exercise 26.28

Part A

In the circuit shown in the figure , find the magnitude of current in the upper branch.



ANSWER:

I = 0.800 A

Correct

Part B

Find the magnitude of current in the middle branch.

ANSWER:

I = 0.200 A

Correct

Part C

Find the magnitude of current in the lower branch.

ANSWER:

I = 0.600 A

Correct

Part D

What is the potential difference V_{ab} of point a relative to point b?

ANSWER:

V_{ab} = -3.20 V

Correct

Score Summary:

Your score on this assignment is 100%.
You received 15 out of a possible total of 15 points.