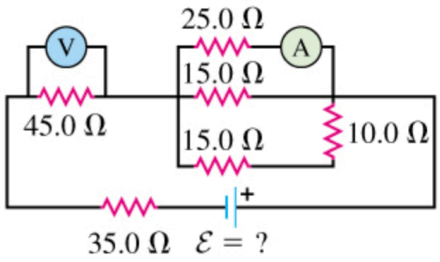
Exercise 26.6 - Enhanced - with Feedback

For the circuit shown in (Figure 1) both meters are idealized, the battery has no appreciable internal resistance, and the ammeter reads 1.65 A.

Figure



Review | Constants

Part A

What does the voltmeter read?

Express your answer in volts.

$V =$ V

Submit Request Answer

Part B

What is the emf $\mathcal{E}$ of the battery?

Express your answer in volts.

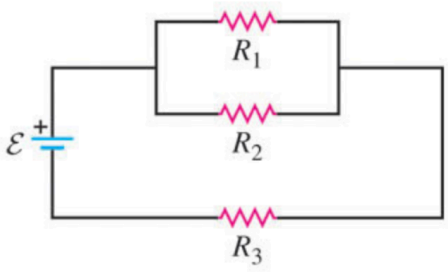
$\mathcal{E} =$ V

Exercise 26.11 - Enhanced - with Feedback

In (Figure 1), $R_1 = 3.00\ \Omega$, $R_2 = 8.00\ \Omega$, and $R_3 = 4.00\ \Omega$. The battery has negligible internal resistance. The current I_2 through R_2 is $5.00\ \text{A}$.

Figure

1 of 1



Review | Constants

Part A

What is the current I_1 through R_1?

Express your answer with the appropriate units.

$I_1 =$ 13.3 A

Submit | Previous Answers

Correct

Correct answer is shown. Your answer $13.33\ \text{A}$ was either rounded differently or used a different number of significant figures than required for this part.

Part B

What is the current I_3 through R_3?

Express your answer with the appropriate units.

$I_3 =$ Value | Units

Part C

What is the emf of the battery?

Express your answer with the appropriate units.

$\mathcal{E}$ = Value | Units

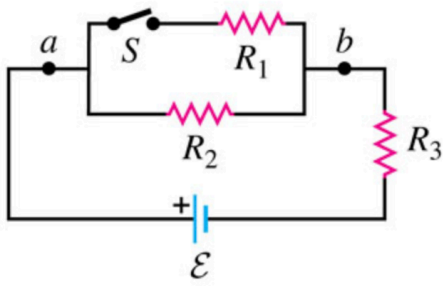
Submit | Request Answer

Exercise 26.18 - Enhanced - with Feedback

In the circuit shown in (Figure 1), $\mathcal{E} = 71.0\ \text{V}$, $R_1 = 4.00\ \Omega$, $R_2 = 6.00\ \Omega$, and $R_3 = 3.00\ \Omega$.

Figure

1 of 1



Review | Constants

Part A

What is the potential difference V_{ab} between points a and b when the switch S is open?

Express your answer with the appropriate units.

V_{ab} = Value Units

Submit Request Answer

Part B

What is the potential difference V_{ab} between points a and b when the switch S is closed?

Express your answer with the appropriate units.

V_{ab} = Value Units

Part C

For the 4.00 Ω resistor, calculate the current through the resistor with S open.

Express your answer with the appropriate units.

I = Value Units

Submit Request Answer

Part D

For the 4.00 Ω resistor, calculate the current through the resistor with S closed.

Express your answer with the appropriate units.

I = Value Units

Submit Request Answer

Part E

For the 6.00 Ω resistor, calculate the current through the resistor with S open.

Express your answer with the appropriate units.

I = Value Units

Submit Request Answer

Part F

For the 6.00 Ω resistor, calculate the current through the resistor with S closed.

Express your answer with the appropriate units.

I = Value Units

Submit Request Answer

Part G

For the 3.00 Ω resistor, calculate the current through the resistor with S open.

Express your answer with the appropriate units.

I = Value Units

Submit Request Answer

Part H

For the 3.00 Ω resistor, calculate the current through the resistor with S closed.

Express your answer with the appropriate units.

I = Value Units

Submit Request Answer

Part I

For each resistor, does the current increase or decrease when S is closed?

Drag the appropriate items to their respective bins.

Reset Help

R_1 R_2 R_3

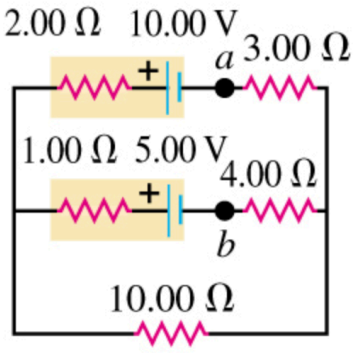
increases	decreases

Submit Request Answer

Review | Constants

Figure

1 of 1



Part A

In the circuit shown in (Figure 1), find the magnitude of current in the upper branch.

Express your answer in amperes.

$I =$ A

Submit Request Answer

Part B

Find the magnitude of current in the middle branch.

Express your answer in amperes.

$I =$ A

Part C

Find the magnitude of current in the lower branch.

Express your answer in amperes.

$I =$ A

Submit Request Answer

Part D

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

Express your answer in volts.

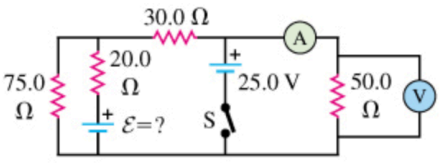
$V_{ab} =$ V

Exercise 26.29 - Enhanced - with Solution

In the circuit shown in (Figure 1) the batteries have negligible internal resistance and the meters are both idealized. With the switch S open, the voltmeter reads 20.0 V.

For related problemsolving tips and strategies, you may want to view a Video Tutor Solution of A complex network.

Figure



Review | Constants

Part A

Find the emf $\mathcal{E}$ of the battery.

Express your answer in volts.

$\mathcal{E}$ = V

Submit Request Answer

Part B

What will the ammeter read when the switch is closed?

Express your answer in amperes.

I = A

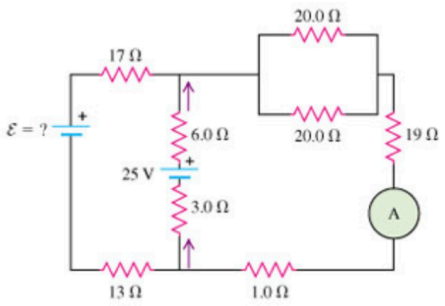
Exercise 26.32 - Enhanced - with Feedback

6 of 10

In the circuit shown in the figure (Figure 1), the 6.0 Ω resistor is consuming energy at a rate of 18 $\mathrm{J/s}$ when the current through it flows as shown.

Figure

1 of 1



Review | Constants

Part A

Find the current through the ammeter *A*.

Express your answer with the appropriate units.

I = Value Units

Submit Request Answer

Part B

What are the polarity and emf of the battery $\mathcal{E}$, assuming it has negligible internal resistance?

Express your answer with the appropriate units. Enter positive value if the polarity of the battery is the same as shown in the figure and negative value in another case.

$\mathcal{E}$ = Value Units

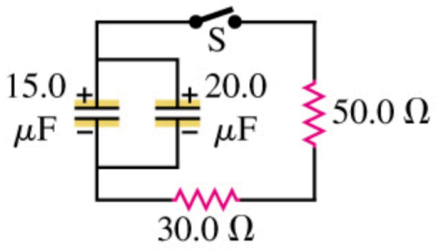
Exercise 26.41 - Enhanced - with Solution

In the circuit shown in (Figure 1) both capacitors are initially charged to 50.0 V.

For related problem-solving tips and strategies, you may want to view a Video Tutor Solution of Discharging a capacitor.

Figure

1 of 1



Review | Constants

Part A

How long after closing the switch S will the potential across each capacitor be reduced to 15.0 V?

Express your answer in milliseconds.

$t =$ ms

Submit Request Answer

Part B

What will be the current at that time?

Express your answer in amperes.

$I =$ A

Problem 26.60

8 of 10

Review | Constants

Part A

What must the emf $\mathcal{E}$ in the figure (Figure 1) be in order for the current through the 7.00 Ω resistor to be 1.75 A ? Each emf source has negligible internal resistance.

Express your answer with the appropriate units.

$\mathcal{E}$ = Value Units

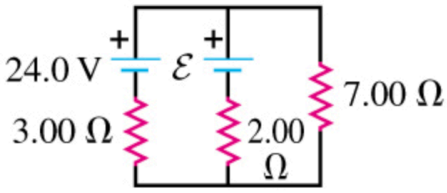
Submit Request Answer

Provide Feedback

Next >

Figure

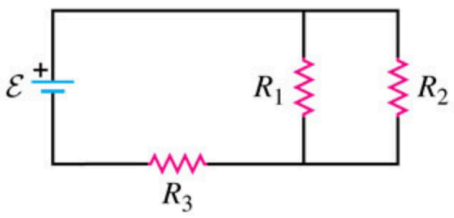
1 of 1



Problem 26.64

In the circuit shown in (Figure 1), $\mathcal{E} = 27.0\ \text{V}$, $R_1 = 6.00\ \Omega$, $R_3 = 12.0\ \Omega$, and R_2 can vary between $3.00\ \Omega$ and $29.0\ \Omega$.

Figure 1 of 1



Review | Constants

Part A

For what value of R_2 is the power dissipated by heating element R_1 the greatest?

Express your answer with the appropriate units.

R_2 = Value Units

Submit Request Answer

Part B

Calculate the magnitude of the greatest power.

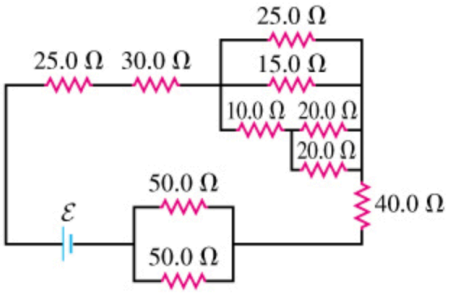
Express your answer with the appropriate units.

P = Value Units

Problem 26.66 - Enhanced - with Feedback

In the circuit shown in (Figure 1) all the resistors are rated at a maximum power of 1.40 W.

Figure



Review | Constants

Part A

What is the maximum emf $\mathcal{E}$ that the battery can have without burning up any of the resistors?

Express your answer in volts.

$\mathcal{E}$ = V

Submit | Request Answer

Return to Assignment | Provide Feedback