Started on	Tuesday, 6 September 2016, 9:01 PM
State	Finished
Completed on	Tuesday, 6 September 2016, 10:09 PM
Time taken	1 hour 8 mins
Grade	**100.00** out of 100.00

Question 1

Correct

Mark 10.00 out of 10.00

P1.03_9ed

There are approximately 260 million passenger vehicles registered in the United States. Assume that the battery in the average vehicle stores 540 watt-hours (Wh) of energy.
Estimate (in gigawatt-hours) the total energy stored in U.S. passenger vehicles.

Answer: 140.4 ✓

Numeric Answer
Total Energy Stored = 140.4 GWh

The correct answer is: 140.4

Question 2

Correct

Mark 10.00 out of 10.00

$$\frac{kg \cdot m^2}{s^3} = ?$$

SI-08

See the figure.

What is the derived unit represented by the basic SI units?

Select one:

- ⦿ a. Watt (W) ✓
- ○ b. Joule (J)
- ○ c. Volt (V)
- ○ d. Ampere (A)

Your answer is correct.

The correct answer is: Watt (W)

Question 3

Correct

Mark 10.00 out of 10.00

P1.07_9ed

How much energy is imparted to an electron as it flows through a 6 V battery from the positive to the negative terminal? Express your answer in attojoules.

$w_{electron} =$ [.961] ✓ aJ

Numeric Answer

$w_{electron} =$ 0.961 aJ

P1.08_9ed

In electronic circuits it is not unusual to encounter currents in the microampere range.

Assume a 35 µA (micro Amp) current due to the flow of electrons in a circuit.

What is the average number of electrons per second that flow past a fixed reference cross section that is perpendicular to the direction of flow?
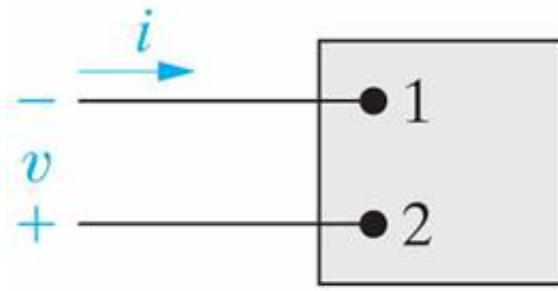
Electrons/sec = 2.18E14   ✓

"Powers of ten" can be entered similar to 32E3 (which equals 32,000).

Numeric Answer
Electrons/sec = 2.18 x 10^{14}

PSS-1

Select the correct expression for power at the terminals 1,2 of the figure.

Select one:

○ A. p = (+) vi

◉ B. p = (-) vi ✓
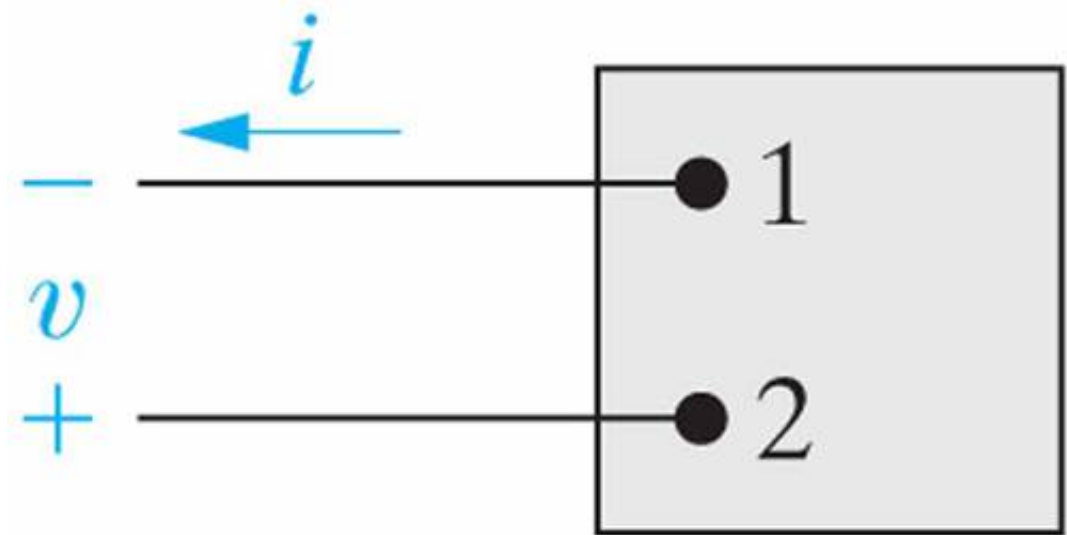   Great! You noticed that current is in the direction of voltage rise.

Your answer is correct.

A. p = (-) vi

The correct answer is: p = (-) vi

PSS-1

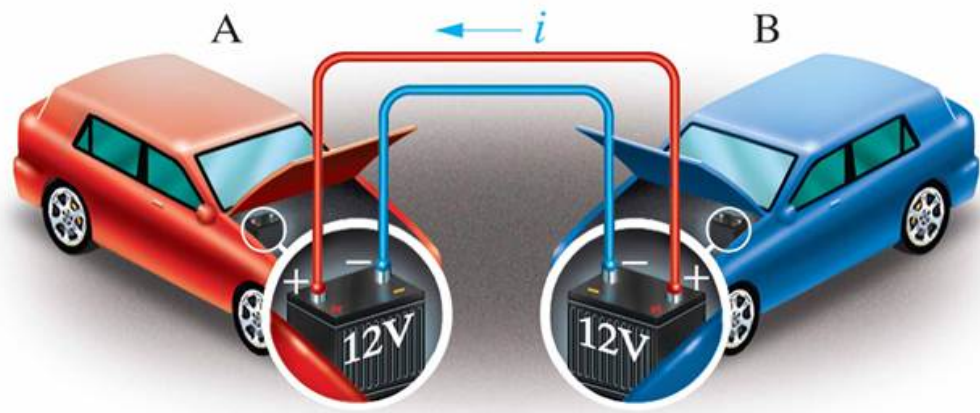Select the correct expression for power at the terminals 1,2 of the figure.

Select one:

○ A. p = (+) vi ✓ Great! Current in the direction of voltage drop.

○ B. p = (-) vi

Your answer is correct.

A. p = (+) vi

The correct answer is: p = (+) vi

Question 7

Correct

Mark 10.00 out of 10.00

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P1.11a_9ed

You find out that your car's battery is dead. A friend "jumps" your battery as shown in the figure.

What is the color of your car? {Red} Red or Blue?

Select one:

○ A. Red - Car A ✓
   You correctly noted that the current is flowing into battery A and is thus receiving energy (i.e. being charged).

○ B. Blue - Car B

○ C. Not enough information shown.

Your answer is correct.

Correct answer text

Car A - red.

The correct answer is: Red - Car A

Question 8

Correct

Mark 10.00 out of 10.00
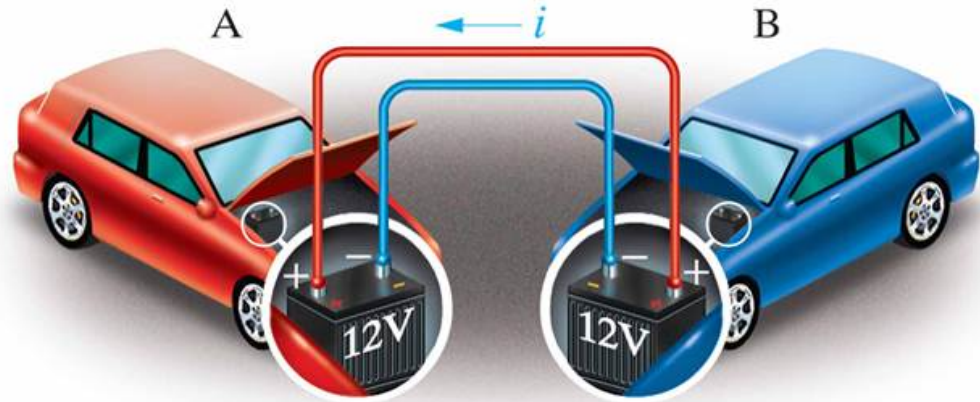
P1.12_9ed

One 12V battery supplies 100 mA to a music player.
How much energy does the battery supply in 4 hours?

W = [17280] ✓ J

P1.12_9ed

One 12V battery supplies 100 mA to a music player.

How much energy does the battery supply in 4 hours?

W = [17280] ✓ J

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P1.11a_9ed

You find out that your car's battery is dead. A friend "jumps" your battery as shown in the figure.

What is the color of your car? {Red} Red or Blue?

Select one:

⦿ A. Red - Car A ✓
You correctly noted that the current is flowing into battery A and is thus receiving energy (i.e. being charged).

◯ B. Blue - Car B

◯ C. Not enough information shown.

Your answer is correct.

Correct answer text

Car A - red.

The correct answer is: Red - Car A