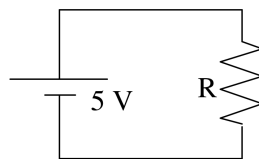


How was last night's test for you?

- A) *Way* too hard - no fair!
- B) Hard, but fair
- C) Seemed reasonable.
- D) Easy enough, thanks!
- E) *Too* easy, make it harder next time!

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Which way does the current flow in this circuit?

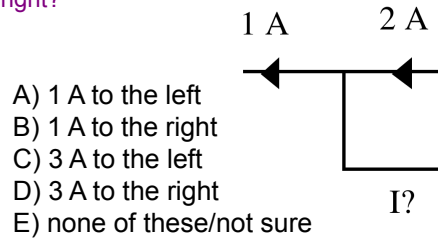


- A: Clockwise
- B: Counterclockwise
- C: Not enough information given

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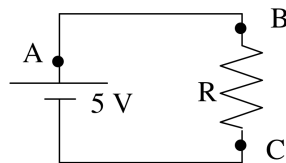
Current is flowing through wires which are part of a circuit, as shown.

What is the current in the wire at the bottom right?



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At which labeled point is the magnitude of the CURRENT the highest?



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Consider the following four situations.

- i) An ion (charge +Q) moves to the right.*
- ii) A neutral hydrogen atom (proton, +e, and light electron, -e) moves right.*
- iii) A beam of electrons in a TV shoots right*
- iv) In an ionic solution, massive positive ions flow right, light negative electrons flow with equal speed to the left.*

In which of these is the net current ZERO?

- A: All of the above B: ii only C: iv only
D: ii and iv only E: None of these/???

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Consider the following four situations.

- i) An ion (charge +Q) moves to the right.*
- ii) A neutral hydrogen atom (proton, +e, and light electron, -e) moves right.*
- iii) A beam of electrons in a TV shoots right*
- iv) In an ionic solution, massive positive ions flow right, light negative electrons flow with equal speed to the left.*

In which is the net current to the RIGHT?

- A: i only B: iii only C: iv only
D: i and iv only E: None of these/???

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An ideal battery produces a fixed...?

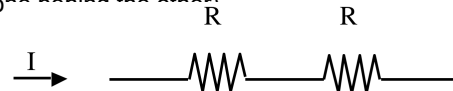


- A) Current Output
- B) Electric Charge
- C) Power Output
- D) Electric Potential Difference
- E) None of the Above

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Two identical resistors are wired in series

(one behind the other)



If there is an electric current entering the combination, the current in the *second* resistor is

- A: Equal to
- B: Half
- C: Smaller than, but not necessarily halfthe current in the first resistor.

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DC currents
(Numbers are very different for "AC"!)

Very roughly...

- 300 μ A "threshold"
- 1 mA most people notice something
- 10 mA muscular contractions
- 70 mA (through body but across heart, >1 sec): ventricular fibrillation

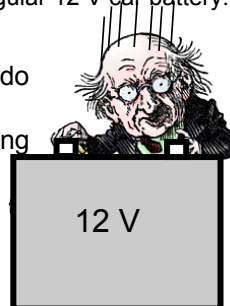
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Your (slightly crazed) physics professor wants to grab both poles of a regular 12 V car battery.
What happens?

A: STOP! Don't let him do it, certain death!

B: Warning! (This is going to hurt a little.)

C: Let him go for it.
(He won't notice a thing...)



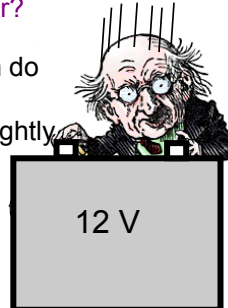
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What if he says he's going to connect the poles with a screwdriver?

A: STOP! Don't let him do it, very bad idea!

B: Warning! (This is slightly risky)

C: Let him go for it.



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Household appliances all have $\Delta V=120\text{ V}$.
What is the approximate resistance of the filament (at operating temperature) of a 60W lightbulb?

- A) $R = 100\text{ Ohms}$
- B) $R = 120\text{ Ohms}$
- C) $R = 12000\text{ Ohms}$
- D) $R = 2\text{ Ohms}$
- E) None of the Above

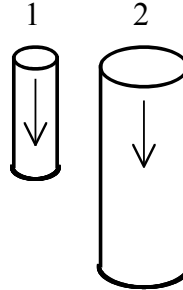


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Two cylindrical resistors are made of the same material (same resistivity ρ).

Resistor 2 is twice as long and has twice the diameter of resistor.

What is the ratio R_2/R_1 ?



- A) 2
- B) 4
- C) 1/2
- D) 1/4
- E) 1