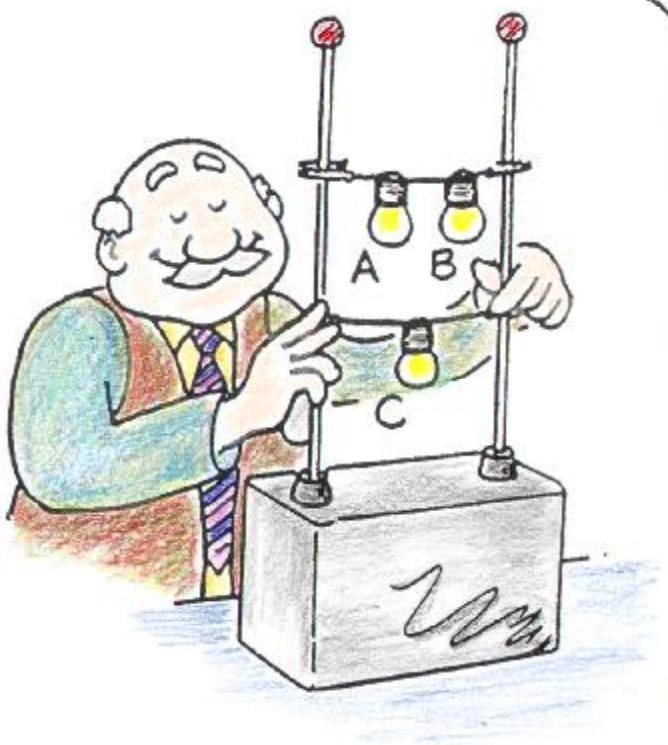
NEXT-TIME QUESTION

Three identical lamps of resistance 12 ohms are connected to the 12-V automobile battery demo as shown.



1. What is the current in each lamp?
2. What is the voltage across each lamp?
3. What is the power dissipated in each lamp?
4. How does the power dissipated in lamp C change if lamp A is unscrewed?
5. What happens to the power dissipated in lamp A if lamp C is unanswered?

Hewitt Drew-it!

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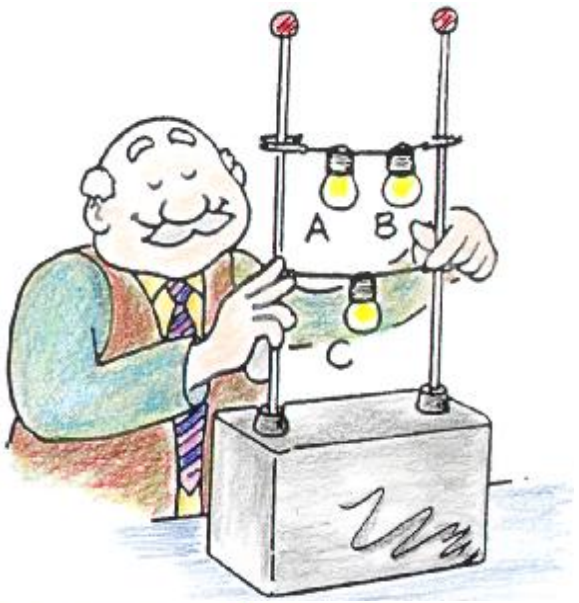
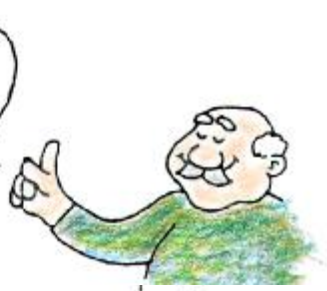


1.) What is the current in each lamp?
2.) What is the voltage across each lamp?
3.) What is the power dissipated in each lamp?
4.) How does the power dissipated in lamp C change if lamp A is unscrewed?
5.) What happens to the power dissipated in lamp A if lamp C is unanswered?

Answers: 1.0 A; 12 V; 12 W; no change; no change

1. By Ohm's law, lamps A and B have 0.5 A in them. Lamp C has 1.0 A.
2. Voltage across lamps A and B is 6 V each (12 V across both). Voltage across Lamp C is 12 V.
3. Power in A is 3 W, and likewise, 3 W in B. Power in C is 12 W.
4. and 5. No change.



CONCEPTUAL Physics

ARBOR SCIENTIFIC
TOOLS THAT TEACH.