

Name: _____

Period: _____

Electricity In Class Review

8.7

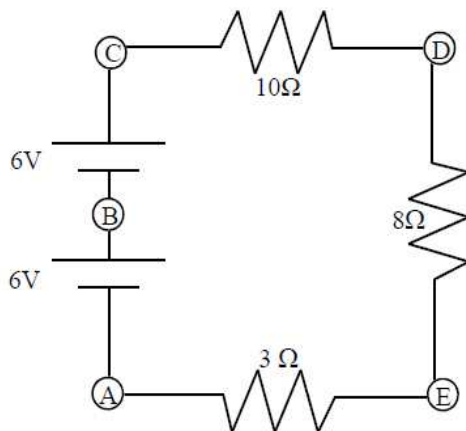
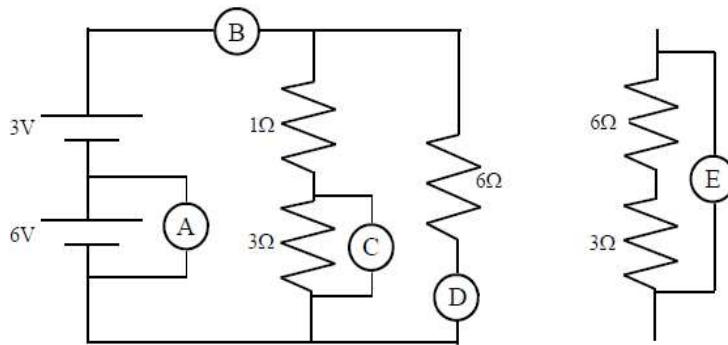
<p>1. A) A $24\ \mu\text{C}$ charge and a $-1.2\ \mu\text{C}$ are 6 mm away from each other. Calculate the force between them.</p> <p>B) Will the two charges attract or repel each other?</p> <p>C) If the $24\ \mu\text{C}$ charge touches ground what will happen?</p> <p>D) If the distance between them is doubled, by how much does the force change?</p> <p>E) If one of the charges was halved, by how much does the force change?</p>	<p>2. If an object is negative, did it gain or lose electrons?</p> <p>3. How much charge do 25 electrons have?</p> <p>4. An object has a charge of $-3.2\ \mu\text{C}$ object. How many electrons did it gain or lose?</p> <p>5. Why can an object not gain a charge equal to 15.6 electrons?</p>
<p>6. By the direction of the electric field, decide if the charges are positive or negative.</p> <p>7. When do two charges attract each other?</p>	<p>8. A. Will the two charges attract or repel each other?</p> <p>B. To increase the potential energy between the two charges, should you pull them apart or push them together?</p>
<p>9. A positively charged rod is brought close to a conducting sphere.</p> <p>A. Did the rod gain or lose electrons?</p> <p>B. Which side of the sphere will be negative?</p>	<p>10. Decide which of the wires has the most resistance.</p> <p>A. A wire at 5°C OR a wire at 15°C.</p> <p>B. A thick 2m wire OR a thick 2cm wire.</p> <p>C. A thick 2cm long wire OR a thin 2cm long wire?</p> <p>D. A wire made of silver OR a wire made of copper?</p> <p>11. What do we call a substance with no resistance at very low temperatures?</p>
<p>12. Comparing circuits to water: resistor, battery, switch, wire, light bulb, diode, or capacitor?</p> <p>A. _____ A water pump.</p> <p>B. _____ A pipe.</p> <p>C. _____ A valve or faucet.</p> <p>D. _____ A water wheel (does something useful).</p> <p>E. _____ A water tower (gives temporary pressure).</p> <p>F. _____ A restriction in a pipe.</p> <p>G. _____ A one-way valve.</p>	<p>13. Draw a circuit with 2 batteries, a switch, and two light bulbs in series.</p>
<p>14. Slim Jim falls off of a building and grabs onto a power line to save himself.</p> <p>A. Give two reasons why he is safe.</p> <p>B. Why would touching the ground be bad?</p>	<p>16. Which switches would need to be closed?</p> <p>A. For only resistor 2 to be on?</p> <p>B. To short circuit the battery?</p> <p>C. For only resistors 1 and 2 to be on?</p>
<p>15. Fuse or circuit breaker?</p> <p>A. _____ Can be reset.</p> <p>B. _____ Protects against too much current.</p> <p>C. _____ Must be replaced.</p>	

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17. A. Electricity is moving _____ . B. Why can't protons move?
18. Voltage _____ , current _____ , and resistance _____ the flow of current.

19. Ammeter, voltmeter, or ohmmeter?

- Meter A:
- Meter B:
- Meter C:
- Meter D:
- Meter E:
- What does Meter A read?
- What does Meter D read?
- What does Meter B read?
- What does Meter E read?

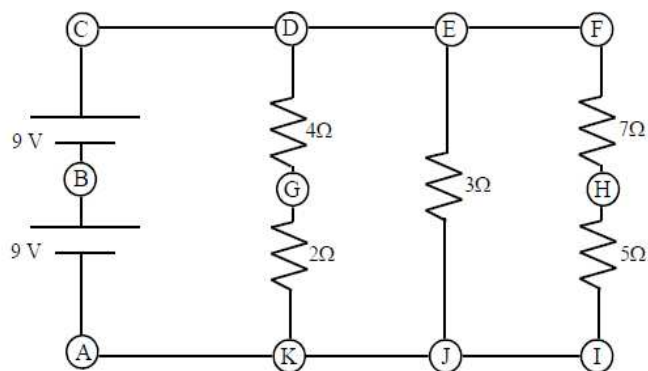


20. Use the circuit at the left to answer the following.

- Is it a series or parallel circuit?
- If the 10Ω resistor is replaced with a wire, how would the current change?
- If one of the batteries is replaced with a 3V battery, how would the current change?
- $I_{\text{total}} =$
- What is the voltage used by the 10Ω resistor?
- $V_{\text{at D}} =$
- $P_{\text{used by the } 8\Omega} =$

21. Use the circuit at the right to answer the following.

- Is it a series or parallel circuit?
- $V_{\text{difference from B to E}} =$
- What is the total resistance between points D and K (branch 1)?
- $I_{\text{thru point G}} =$
- If the 4Ω resistor was replaced by a wire, how would the total current change?
- If branch 3 was broken at point H, how would the current flowing thru the 4Ω resistor change?
- $I_{\text{from J to K}} =$
- $I_{\text{total}} =$
- $R_{\text{total}} =$
- $V_{\text{at point G}} =$



K. $P_{\text{total}} =$