

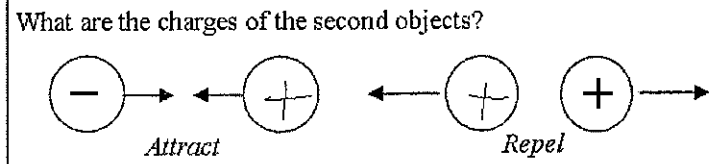
Electricity and Magnetism Review

- | | |
|------------------------|-------------------|
| 1. Voltage <u>B</u> | A. 8 amps = I |
| 2. Resistance <u>E</u> | B. 8 volts = V |
| 3. Power <u>D</u> | C. 8 coulombs = Q |
| 4. Charge <u>C</u> | D. 8 watts = P |
| 5. Current <u>A</u> | E. 8 ohms = R |

- | | |
|------------------------|--|
| 1. Current <u>F</u> | <u>A</u> . A path for electricity to flow. |
| 2. Voltage <u>E</u> | <u>B</u> . A material that allows electricity to flow. |
| 3. Resistance <u>D</u> | <u>C</u> . A material that resists electricity. |
| 4. Insulator <u>C</u> | <u>D</u> . Slows down electricity |
| 5. Conductor <u>B</u> | <u>E</u> . What pushes electricity in a circuit. |
| 6. Circuit <u>A</u> | <u>F</u> . The flow of electrons thru wires. |

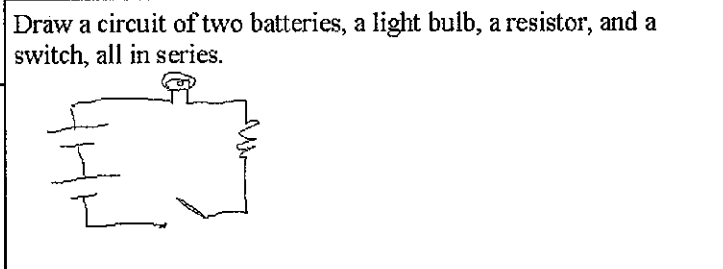
What moves: electrons or protons?
 Why? protons are stuck in nucleus by strong nuclear force.
 An object has a charge of -8 C.
 A) Is the object positive or negative?
 B) Did it gain or lose electrons?
 C) If you touch it to ground, will it lose electrons to ground or gain electrons from ground?
 D) What will its charge be after it is grounded? 0 or neutral

A conductor allows electricity or heat to pass through it.
 Electricity flows through paths called circuits. A closed circuit has no breaks in it, while an open circuit has a break and stops the flow of electricity.
 An insulator will not allow electricity to pass.
 Electricity is made up of flowing electrons.



Like electric charges attract/repel Opposite charges attract/repel.

What is electricity? moving e⁻
 Will electrons flow between the two objects?
 A. -3C -3C NO
 B. 5C 0C NO
-2C -6C
 Why does electricity move?
There's a diff. of charge.



You have two light bulbs and a battery in a circuit. If you add another battery, do the light bulbs get brighter or dimmer?
 Why? more V = more I

What is arcing? spark between two objects
 When and why does arcing occur?
diff. of charge + electric force

You have two light bulbs and a battery in a circuit. If you add another light bulb, do the light bulbs get brighter or dimmer?
 Why?
more bulbs = more R = less I

If a 12 v battery is connected to a 24 Ω resistor, how much current is flowing?
 $V = 12V$ $I = \frac{V}{R} = \frac{12}{24} = .5A$
 $R = 24\Omega$
 $I = \underline{\hspace{1cm}}$
 How much voltage is needed to produce 2 amps through a 4 ohm light bulb?
 $V = \underline{\hspace{1cm}}$ $I = \frac{V}{R}$ $V = 2(4) = 8V$
 $I = 2A$ $V = IR$
 $R = 4\Omega$
 If a light bulb in your house (120 V) draws 0.5 amps, how much power does it use?
 $V = 120V$ $P = VI = 120(.5)$
 $I = .5A$ $= 60W$
 $P = \underline{\hspace{1cm}}$

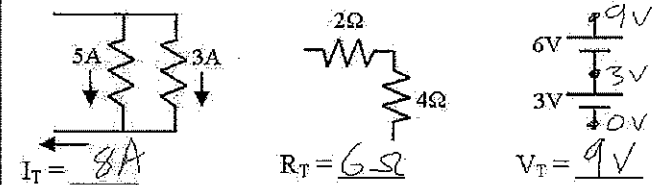
Increases (I)	Increasing resistance <u>D</u> current
Or	Decreasing resistance <u>I</u> current
Decreases (D)	Increasing voltage <u>I</u> current
	Decreasing voltage <u>D</u> current

How can you tell if two light bulbs are in parallel?
unscrew 1, other stays on.
 How can you tell if two light bulbs are in series?
unscrew 1, both go off.
 Is your house wired in series or in parallel?
 Why?
devices are indep.

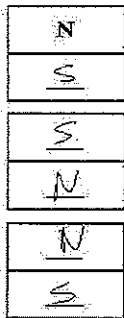
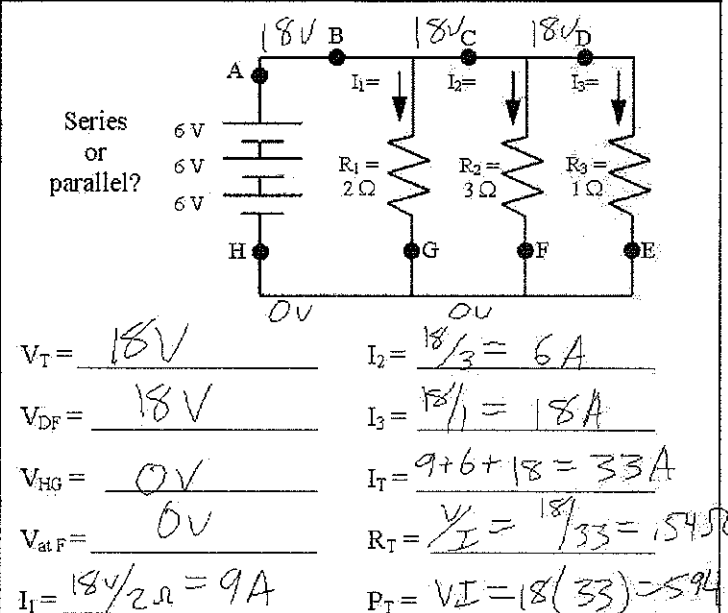
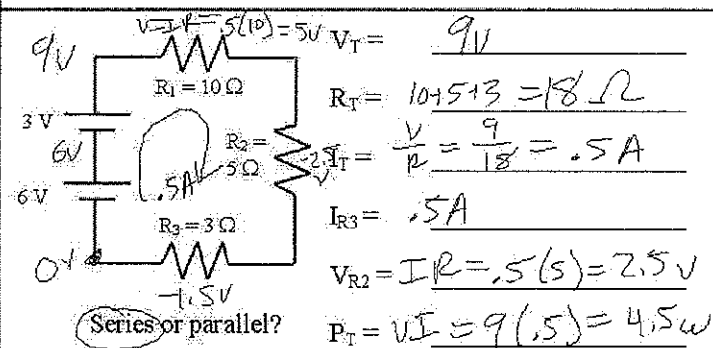
What is the change of voltage across a wire?
0 volts (none)
 Why can a bird sit on a wire and not be electrocuted?
no voltage diff. across feet

What happens when you short circuit one light bulb in a two light bulb circuit?
 What happens if you short circuit a battery?

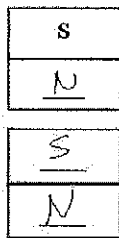
Fill in the missing information on the following graphics.



Where do most of the electrons come from that run thru a circuit?



The three magnets are **repelling** each other. Fill in the missing information.



The two magnets are **attracting** each other. Fill in the missing information.

Someone asks you how what a circuit is and how it works. Tell them.
circuit is a path for moving e's.
voltage pushes, current flows, resistance slows it down.

What will a magnet attract?
Ferrous metals + opp. pole of mag.

What are fuses and circuit breakers?

What will a magnet repel?
same pole magn.

How are they different?

What does moving electricity cause? *magnets*

What is a motor?

What do moving magnets cause? *electricity*

How does it work?

What is an electromagnet?

What is a generator?

How do you strengthen an electromagnet?

How does it work?