

Complete the statements below:

The positively charged particle is the _____.

The negatively charged particle is the _____.

Objects become negative by _____.

Objects become positive by _____.

protons

gaining electrons

neutrons

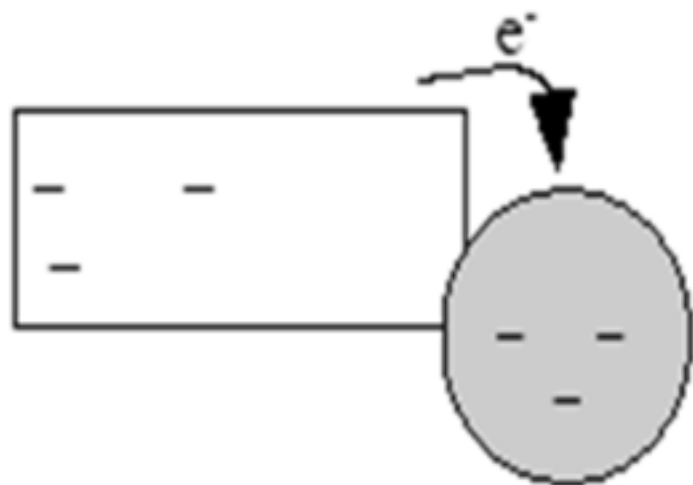
gaining protons

losing protons

electrons

losing electrons

How is the object below charged???



Conduction

Friction

Induction

How is the object below charged???

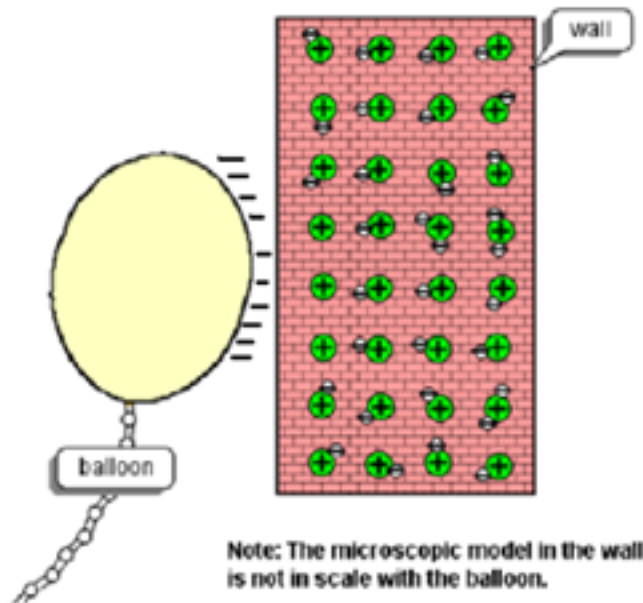


Conduction

Friction

Induction

How is the object below charged???



Conduction

Friction

Induction

Conductors vs. Insulators

(Drag and Drop to the appropriate column)



Match the following terms with their correct definition:

Current

Difference in the number of electrons

Voltage

Opposes the flow of electricity

Resistance

Negatively charged particle

Electrons

Flow of electricity

Protons

Positively charged particle

Match the following terms with their correct definition:

Electric Power

Electricity that is built up in one place

Electric Energy

Rate at which an electrical device converts energy from one form to another

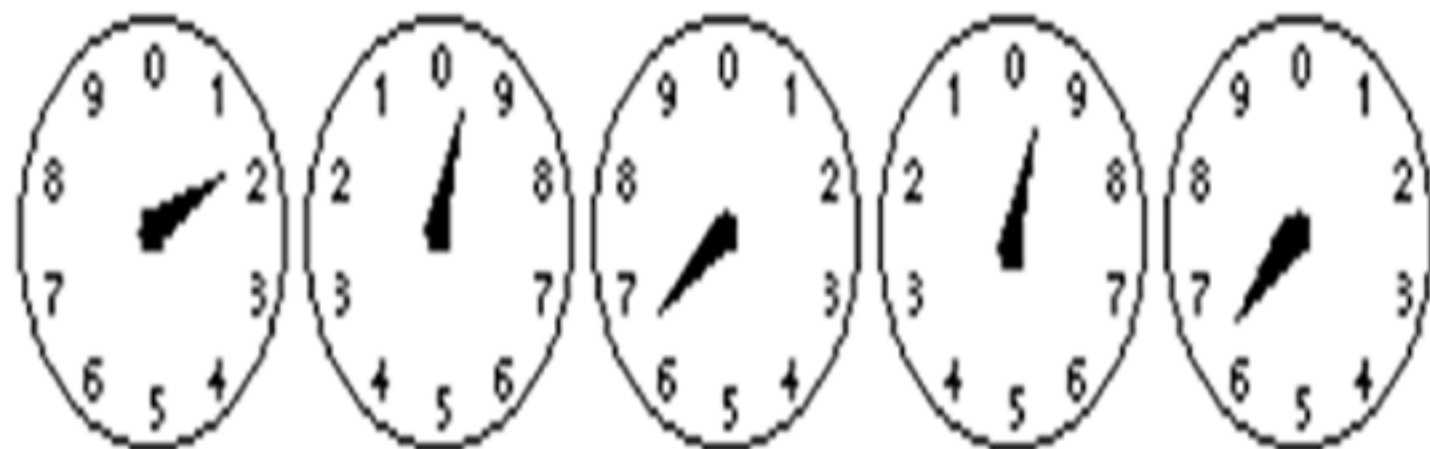
Static Electricity

Device used to protect from overloaded circuits

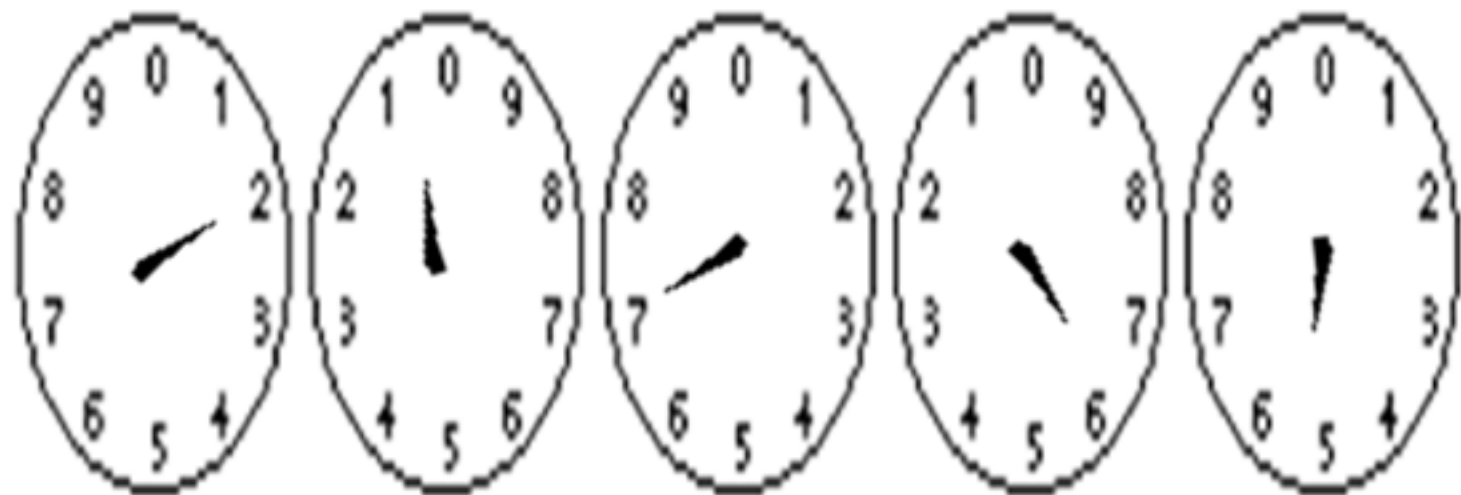
Circuit Breaker/Fuse

Measure of the amount of electric power actually consumed over time

What is the reading on the meter below?

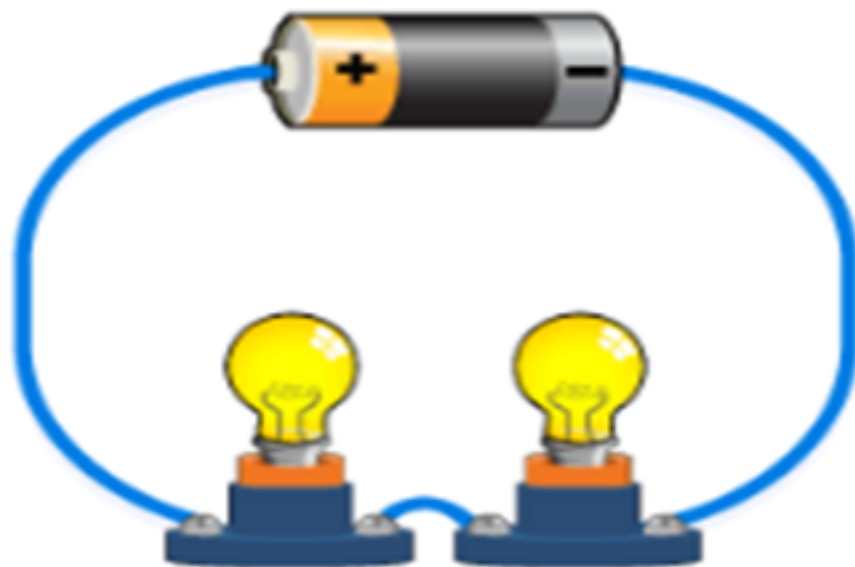


What is the reading on the meter below?



Electricity costs \$0.15 per kWh. What will be the power bill during the 1 month period shown below?





Steps:

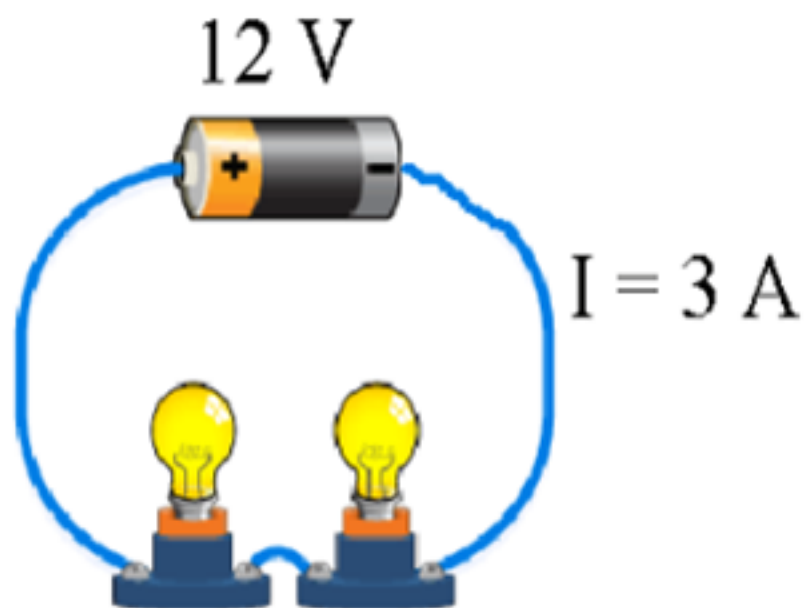
1. Draw arrows to show direction of electron flow!!!
2. Circle with a red pen the lightbulb with the highest voltage!!
3. Place an "X" on the object that acts an energy source!!
4. Place a "Smiley Face" on the object that acts as an energy conductor!!
5. Place a "check mark" on the energy receiver(s)!!

Series vs. Parallel Circuits

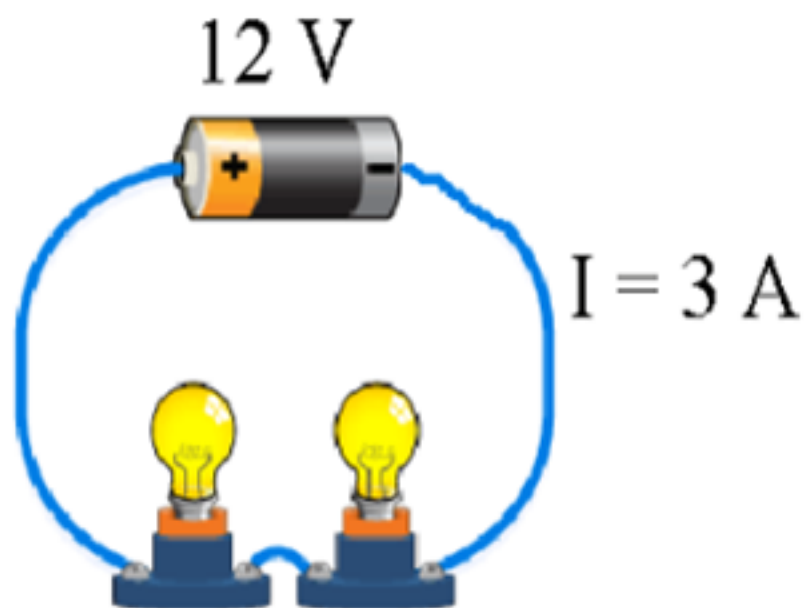


Current is same throughout
Add a bulb, stay same brightness
Add a bulb, get dimmer
1 path
1 out, all out
More than 1 path
1 out, rest on
Voltage is same throughout
Homes are wired this way

What is the resistance in the following circuit below?



What is the power in the following circuit below?



Match the circuit symbol with their correct meaning:

Open Switch



Conductor



Lightbulb



Resistor



Closed Switch



Dry Cell



Motor



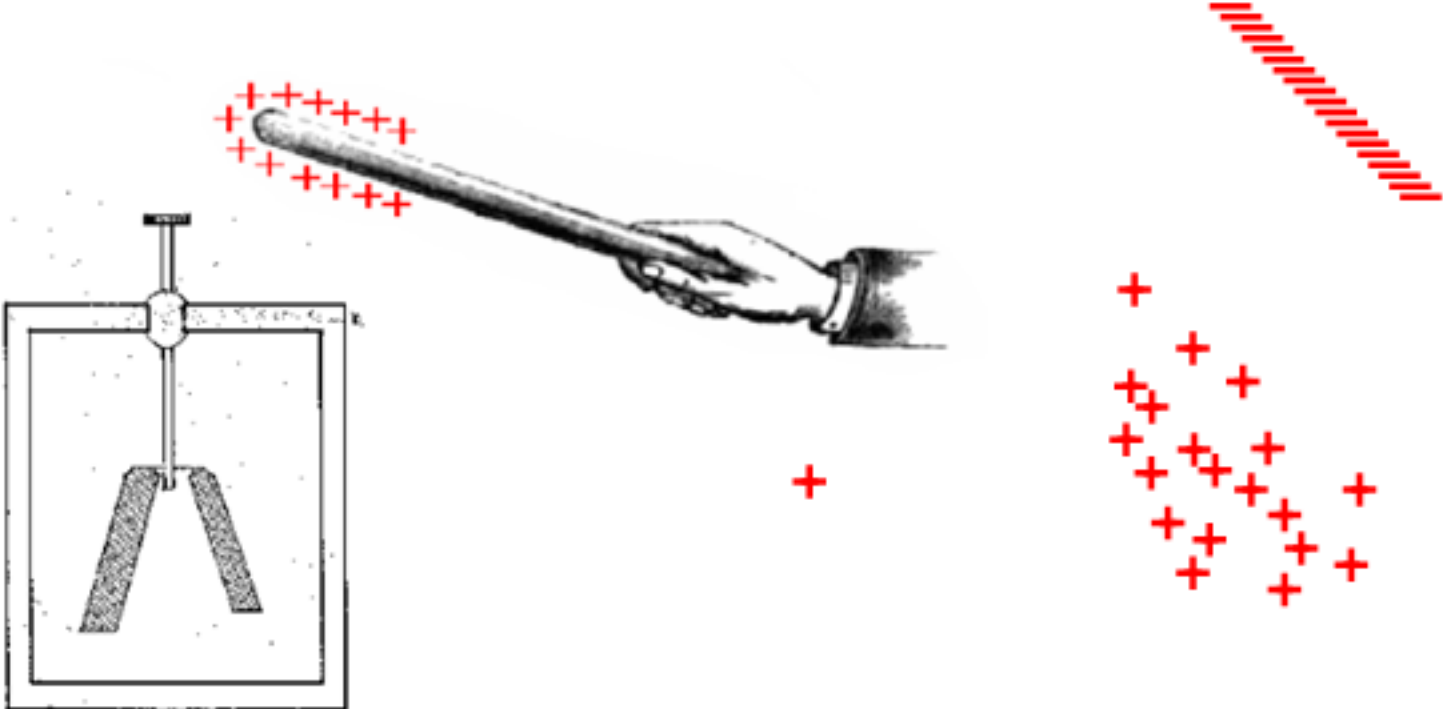
Which is charged, which is not charged?

Electroscopes

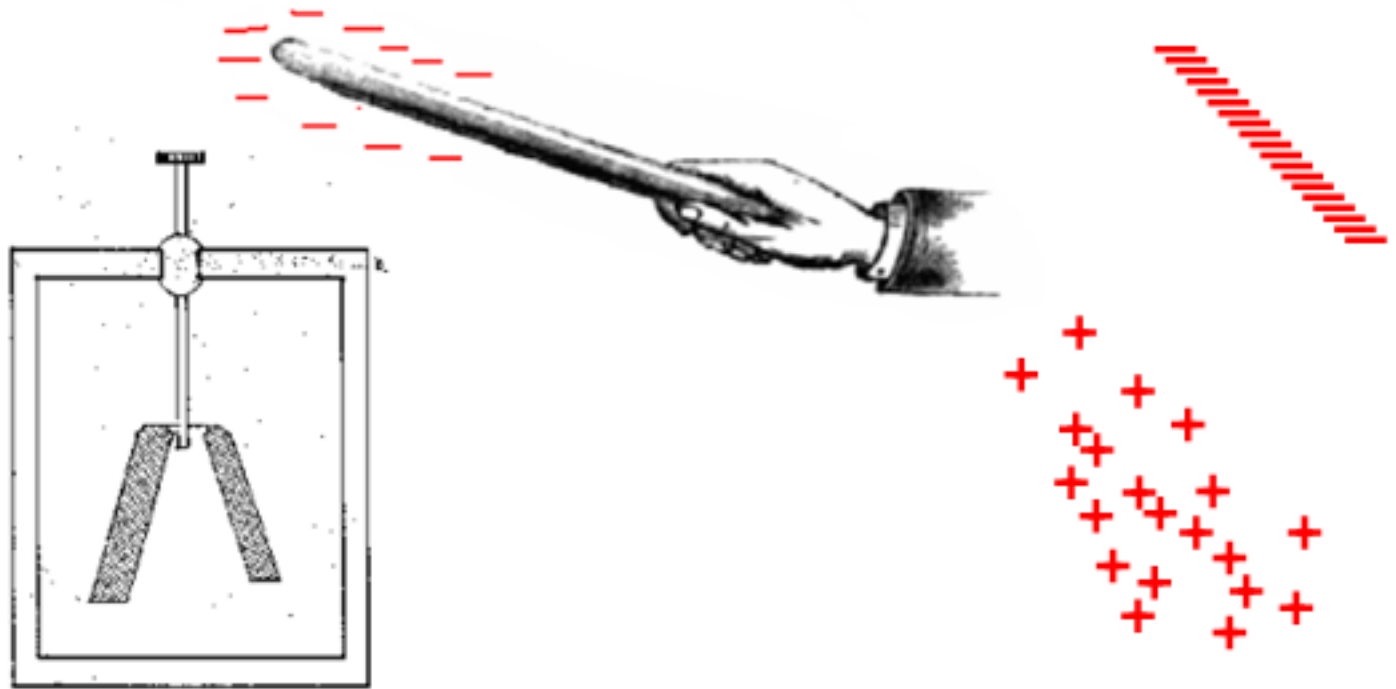


Charged
Not charged

In the diagram below, drag protons and electrons onto the electroscope to indicate why the leaves are separated:



In the diagram below, drag protons and electrons onto the electroscope to indicate why the leaves are separated:



Solve for the unknown:

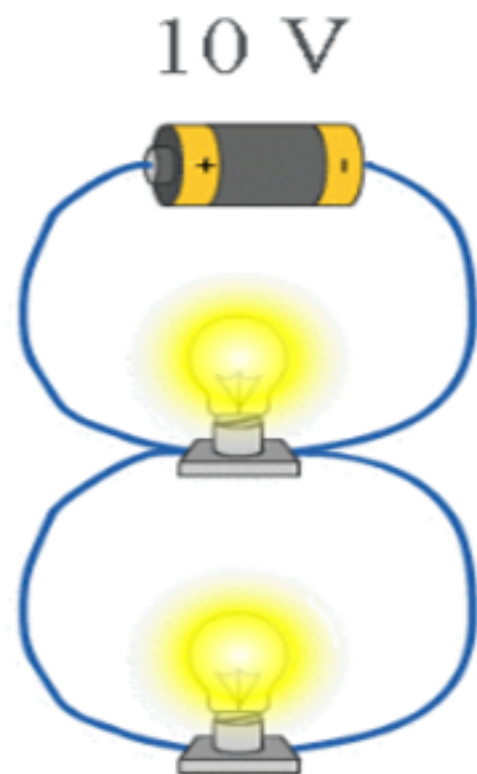
$$R = 10 \text{ ohms}$$



$$I = 2 \text{ A}$$

$$V = ?$$

The circuit below has a total resistance of $5\ \Omega$. Find the current that will flow through the circuit!!



An air conditioner uses 2000 W of power when plugged into a wall outlet that operates at a voltage of 220 V. What is the current flowing through the air conditioner?

What type of charge do 1-3 have?
To see if you are right pull the word
into the yellow area.



1. protons
2. electrons
3. neutrons

The law of charges states that

opposite charges

like charges

What are the names of the three ways to charge an object

1. rubbing

2. direct contact

3. no direct contact

Answer the question and pull the question towards the red to see if you are right.

What is an insulator?

What is static electricity?

What is a conductor?

A. an object that lets charges flow through it easily

B. a build-up of electric charges

C. an object that doesn't let charges flow through it easily

Electricity Terminology

Move the words below their correct definitions. To see if you are correct click on the gray box.

circuit

resistance

conductor

induction

proton

friction

insulator

conduction



Charging a neutral object by bringing it close to a charged object!



The path through which electric charges flow.



A positive charged particle that is found in the nucleus.



A force that opposes the movement of charged particles.

A material that lets charges flow through easily



A material that doesn't let charges flow easily.



Charging an object by direct contact.



Rubbing two objects together to charge an object.



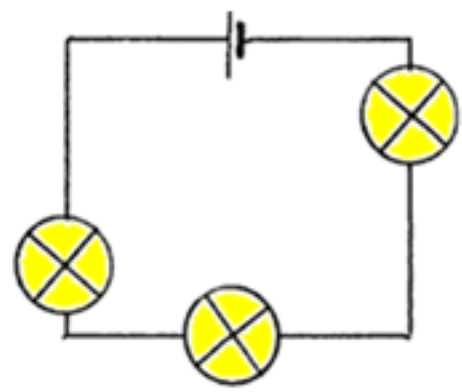
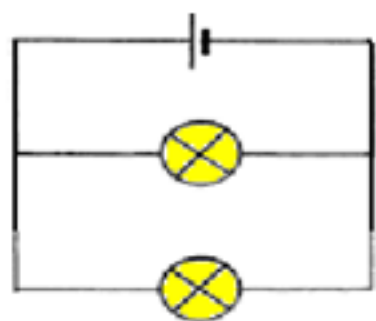
Create a series circuit with a dry cell, 3 lamps, and a closed switch! You can copy and paste(right-click) the components to "create more"!! Color the lamp yellow if the bulb comes on!!



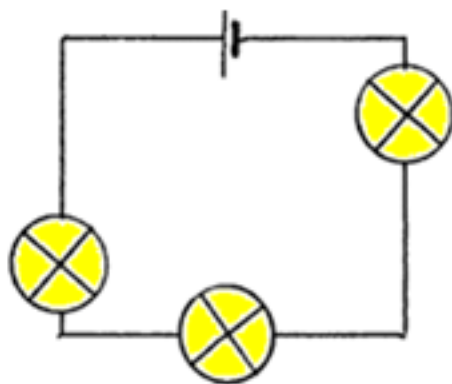
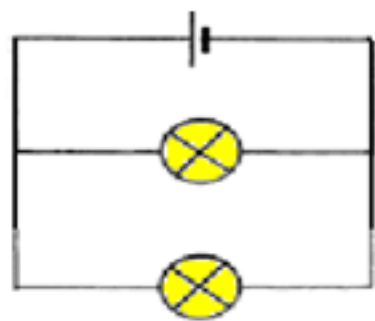
Create a parallel circuit with a dry cell, 3 lamps, and a closed switch! You can copy and paste(right-click) the components to "create more"!! Color the lamp yellow if the bulb comes on!!

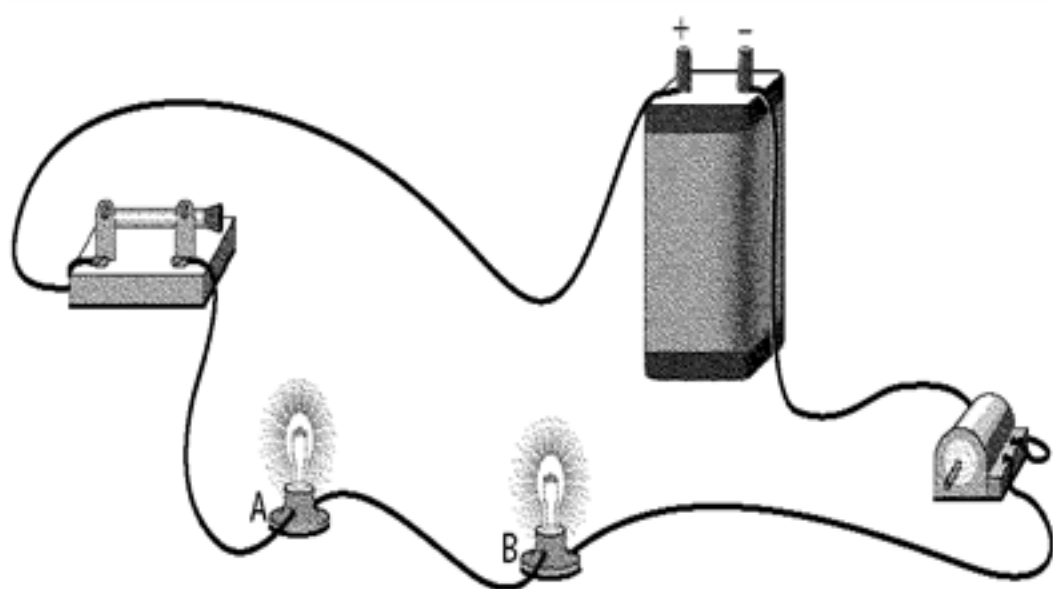


In which circuit would the lightbulbs grow dimmer if another bulb is added?(Circle your answer!!)



If each lightbulb below offered the same resistance, in which circuit would you find the lowest resistance?
(Circle your answer!!)





1. In which direction does the current flow?

+ to - or - to +

2. Is the Voltage higher at A or B? Why?

A or B

3. What causes current to flow from one terminal to the other?

- ___ 28. Unit for velocity
- ___ 29. Unit for acceleration
- ___ 30. Unit for force, including weight
- ___ 31. Unit for kinetic and potential energy
- ___ 32. Unit for electrical energy
- ___ 33. Unit for power
- ___ 34. Unit for work
- ___ 35. Unit for potential difference
- ___ 36. Unit for current
- ___ 37. Unit for resistance
- ___ 38. Unit for mass
- ___ 39. Unit for electrical power
- ___ 40. Unit for speed
- ___ 41. Unit for thermal energy
- ___ 42. Unit for heat capacity or specific heat
- ___ 43. Unit for temperature

a) $\text{J/g}^{\circ}\text{C}$

b) kg

c) N

d) J

e) kWh

f) m/s/s

g) W

h) m/s

i) Ohm

j) V

k) A

l) $^{\circ}\text{C}$ or K

m) m