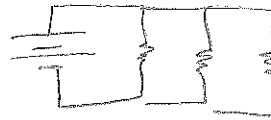


Topic 5C: Electric Circuits

Skill 44: Parallel Circuits "OR" Circuits

The current has alternate paths



The total current is the sum of the current in each path

$$I_T = I_1 + I_2 + I_3$$

The potential difference is the same on each path

$$V_T = V_1 = V_2 = V_3$$

The equivalent resistance (R_{eq}) is the "inverse of the sum of the inverse"

$$\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \dots \text{The total resistance must be less than least resistant path}$$

★ IF you remove a bulb in parallel it has no impact on other components
[resistors not change & voltage not changed]

Ohm's law applies to each component & the total circuit

$$V = IR \text{ for rows}$$

Parallel Circuits for columns

	V	I	R
1			
2			
3			
eq or T			

Skill 45: Junction Rule

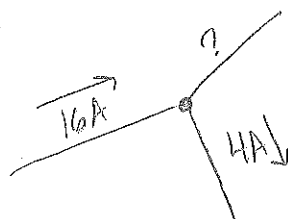
The current entering a junction must be equal to the current leaving a junction. Consider all paths as "One way roads"

To solve make a list of
(Based on arrow toward-
or away)

In	out

The columns must be equal
so figure out how much is
missing and

Ex:



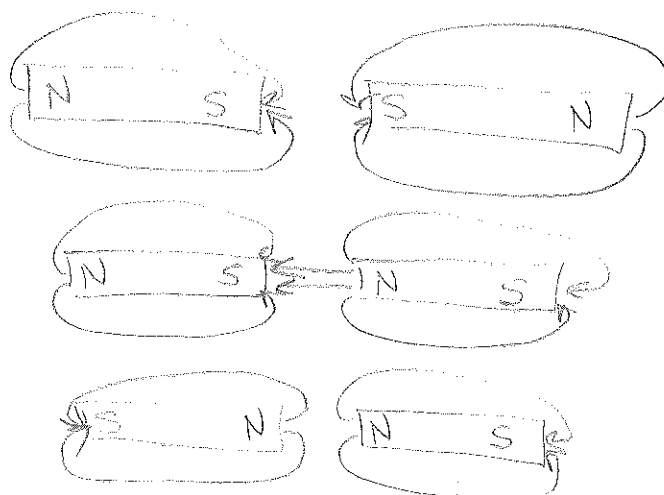
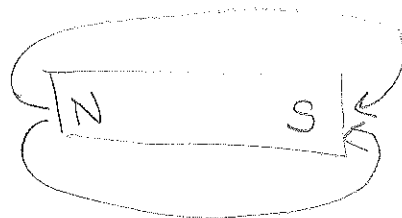
In	out
16A	4A
	12A

Topic 5D: Magnetism

Skill 46: Magnetism

No such thing as a "monopole" magnet

Field lines represent the direction the north end of a compass would point. Away from North, toward South



A moving electric charge creates a magnetic field.

A magnet in motion causes a magnetic field to move and results in a current in a wire

→ known as electromagnetic induction.

Relative motion is required.