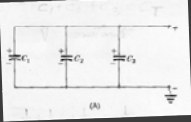


## 5 - ELECTRIC CIRCUITS

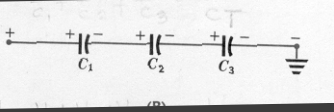
### Ohm's Law

- Ohm's Law
- $$V = IR$$

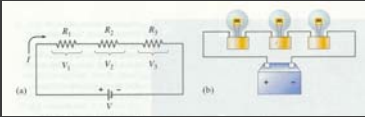
### Capacitors (Parallel)

- 
- $$C_T = C_1 + C_2 + C_3 + \dots$$

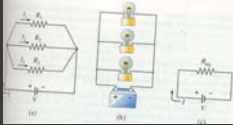
### Capacitors (Series)

- 
- $$\frac{1}{C_T} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \dots$$
- $$C_T = \frac{C_1 C_2}{C_1 + C_2}$$

### Resistors (Series)

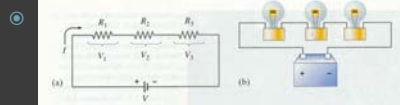
- 
- $$R_T = R_1 + R_2 + R_3 + \dots$$

### Resistors (Parallel)

- 
- $$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots$$
- $$R_T = \frac{R_1 R_2}{R_1 + R_2}$$

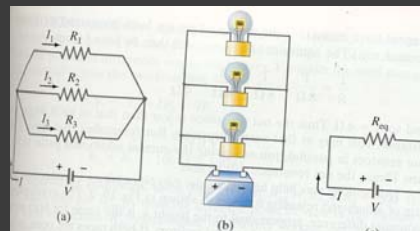
### Voltage (Series)

- $V = V_1 + V_2 + V_3$



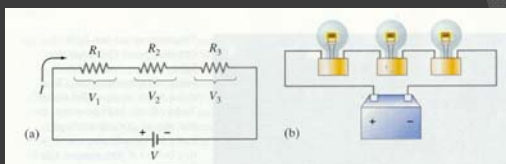
### Voltage (Parallel)

- $V = V_1 = V_2 = V_3$



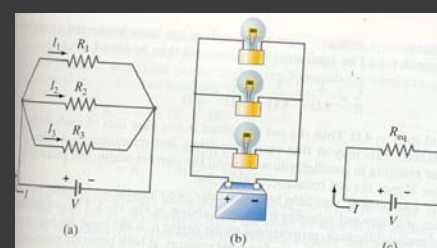
### Current (Series)

- $I = I_1 = I_2 = I_3$



### Current (Parallel)

- $I = I_1 + I_2 + I_3$



### Electric Power

- $Power = \frac{\text{energy transferred}}{\text{Time}} = \frac{QV}{t}$

- $P = IV = I^2R = \frac{V^2}{R}$

### Circuitry Rules

Series [think Sr.V]	Parallel
$R_{eq} = R_1 + R_2 + R_3 \dots$	$\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \dots$
$\frac{1}{C_{eq}} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} \dots$	$C_{eq} = C_1 + C_2 + C_3 \dots$
$V_T = V_1 = V_2 = V_3 \dots$	$V_T = V_1 = V_2 = V_3 \dots$
$I_T = I_1 = I_2 = I_3 \dots$	$I_T = I_1 + I_2 + I_3 \dots$