Circuitos Resistivos

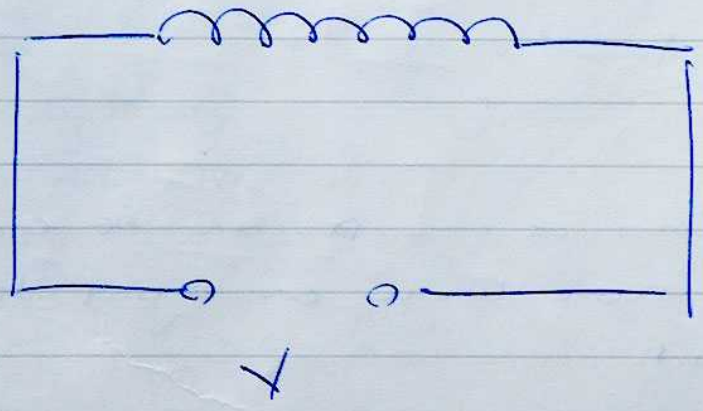
↳ Funciona con ~~inductancias~~ (Bobinas)
↳ Resistencias

Circuitos Inductivos

↳ Funciona con inductancias (Bobinas)

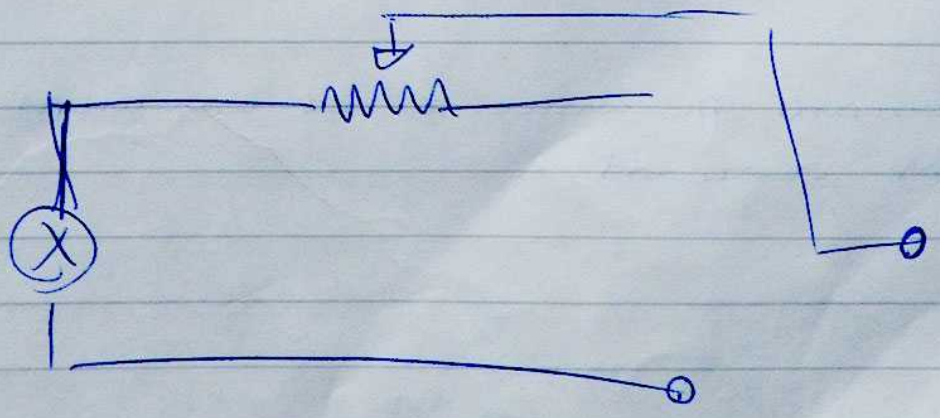
Circuitos Capacitivos.

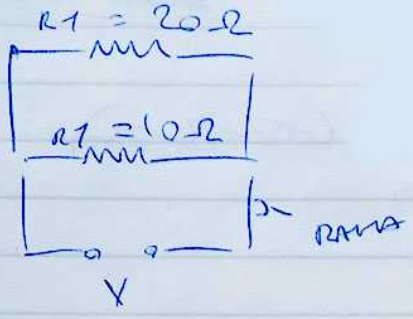
↳ Funciona con condensadores o capacitadores.



Reostato o Resistencia variable

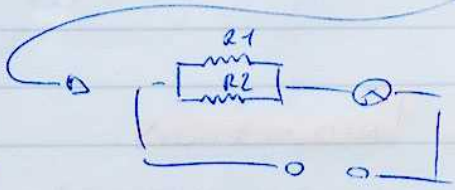
↳

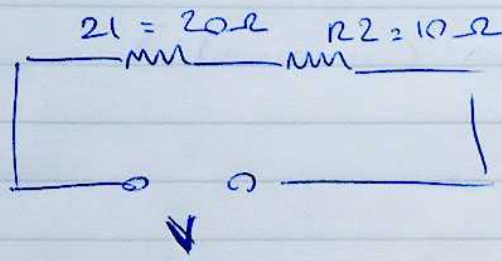




RESISTENCIA TOTAL

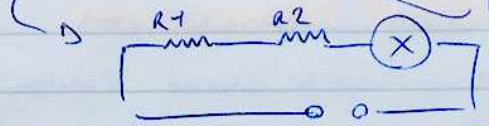
$$RT = \frac{20 \times 10}{20 + 10} = 6{,}6\ \Omega$$





$$RT = R1 + R2 = 20 + 10$$

$$RT = 30\ \Omega$$

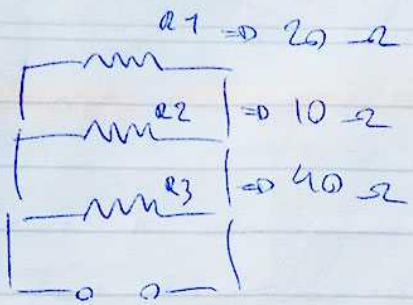


- EN UN CIRCUITO PARALELO LA RESISTENCIA TOTAL VA A SER DE MENOR VALOR QUE LA RESISTENCIA DE MENOR VALOR.

- EL CIRCUITO PARALELO ES UN DIVISOR DE CORRIENTE, LA TENSIÓN SE MANTIENE IGUAL EN TODAS LAS ELEMENTOS CONECTADOS.

- EL CIRCUITO SERIE ES UN DIVISOR DE TENSIÓN

- LA INTENSIDAD DE CORRIENTE ES LA MISMA EN TODOS LOS ELEMENTOS.



1

$$RQ = \frac{R1 \times R2}{R1 + R2} = \frac{20 \times 10}{20 + 10} = 6.6\ \Omega$$

$$RT = \frac{RP \times R3}{RP + R3} = \frac{6,6 \times 40}{6,6 + 40} = 5.66\ \Omega$$

2

$$\frac{1}{R1} = \frac{1}{20} = 0,05$$

$$\frac{1}{R2} = \frac{1}{10} = 0,1$$

$$\frac{1}{R3} = \frac{1}{40} = 0,025$$

$$\frac{1}{0,05 + 0,1 + 0,025}$$

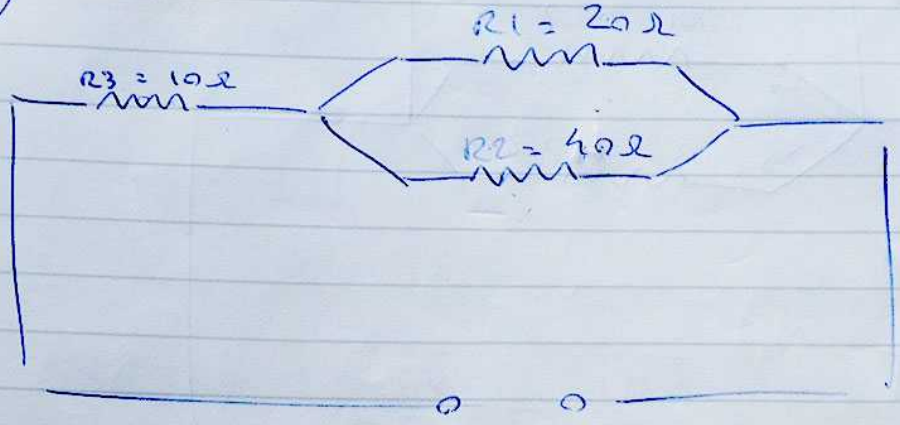
$$\frac{1}{0,175}$$

REOSTATO / REÓSTATO = RESISTENCIA VARIABLE

- REGULA LA INTENSIDAD DE CORRIENTE A TRAVÉS DE LA CARGA, DE FORMA QUE SE CONTROLA LA CANTIDAD DE ENERGÍA QUE ~~ATRAVIESA~~ FLUYE Y FLUYE HACIA LA RESIST.

- LOS REOSTATOS SON UTILIZADOS EN:
  - TECNOLOGÍA ELÉCTRICA (ELECTROTECNIA)
    - ARRANQUE DE MOTORES
    - CUALQUIER APLICACIÓN QUE REQUIERA VARIACIÓN DE RESISTENCIA.

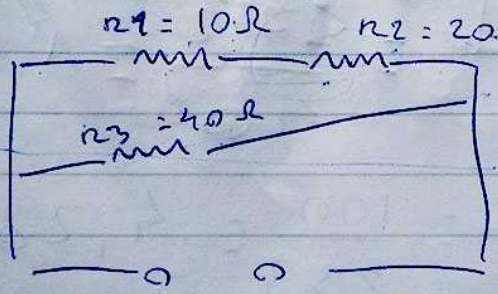
1



$$\frac{R1 \times R2}{R1 + R2} = \frac{20 \times 40}{20 + 40} = 13,33$$

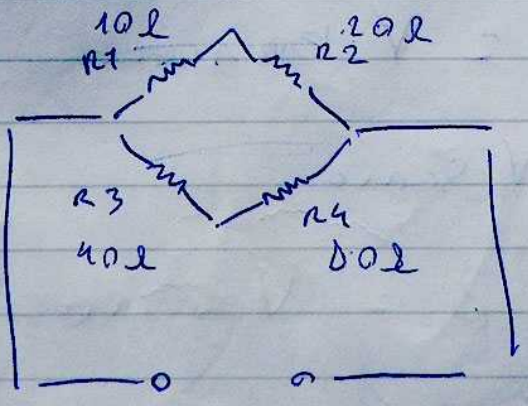
$$R3 + 13,33 = 10 + 13,33 = 23,33$$

2



$$R1 + R2 = 10 + 20 = 30$$

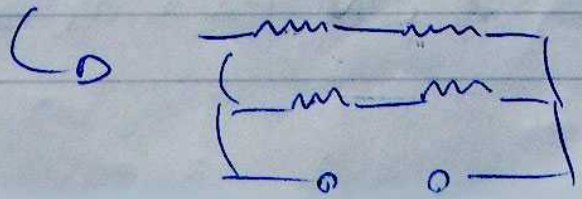
$$\frac{30 \times 40}{30 + 40} = 17,14$$

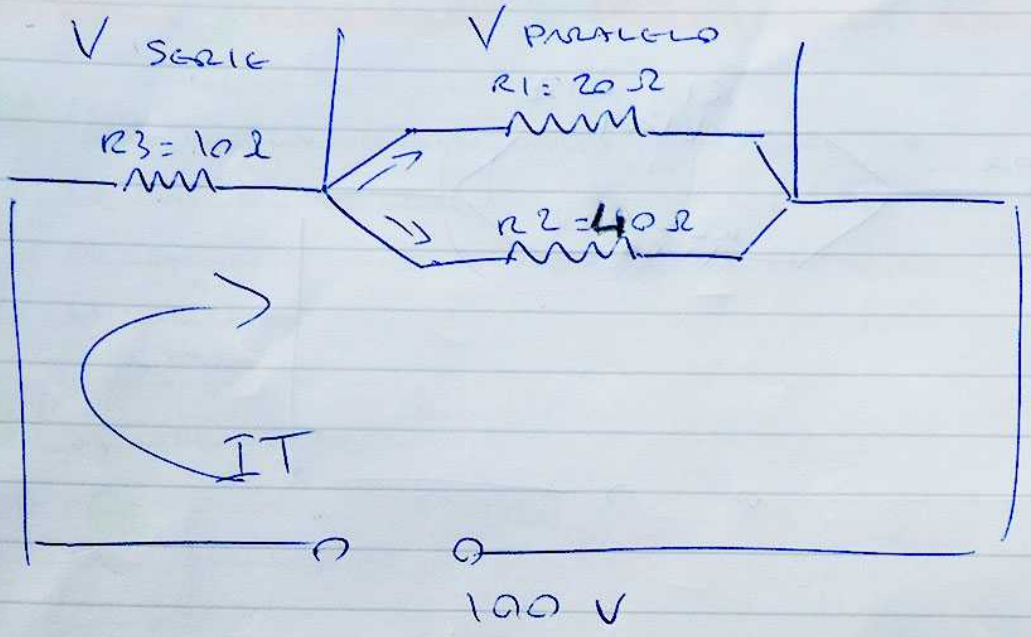


$$R1 + R2 = 10 + 20 = 30$$

$$R3 + R4 = 40 + 80 = 120$$

$$\frac{30 \times 120}{30 + 120} = 24$$





Hallar: RT
IT
V serie
V Paralelo
I 1
I 2

$$I^1 = \frac{57,2}{20} = 2,86\ A$$

$$I^2 = \frac{57,2}{40} = 1,43\ A$$

$$I\,T. = \frac{VT}{RT} = \frac{100}{23,3} = 4,28\ A$$

$23,3 \times 4,28 = 99,7 = V$ PARALELO

$100 - 99,7 = 0,3\ V = V$ SERIE

$4,28 \times 10 = 42,8 = V$ SERIE

$100 - 42,8 = 57,2\ V$ PARALELO

Partie 1

⇒ $RP = \frac{R1 \times R2}{R1 + R2} = \frac{20 \times 40}{20 + 40} = 13,33\ \Omega$

⇒ $RT = RP1 + R3 = 13,33 + 10 = 23,33\ \Omega$

⇒ $IT = \frac{VT}{RT} = \frac{100}{23,3} = 4,28\ A$

⇒ $V_{SERIE} = R3 \times IT = 10 \times 4,28 = 42,8\ V$

⇒ $VP = VT - V_{SERIE} = 100 - 42,8 = 57,2\ V$

⇒ $I_{R1} = \frac{VP}{R1} = \frac{57,2}{20} = 2,86\ A$

⇒ $I_{R2} = \frac{VP}{R2} = \frac{57,2}{40} = 1,43\ A$