

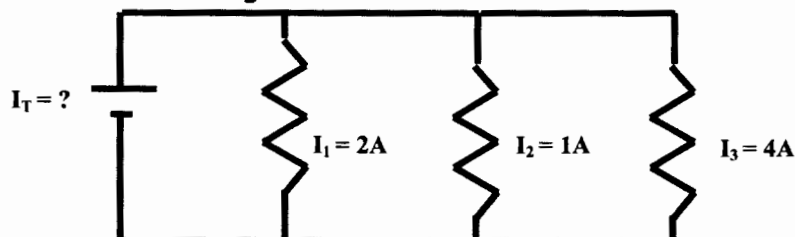
CIRCUIT MATH

Key

Solve the following problems showing all work.

1. Find
- I_T
- for the following circuit.

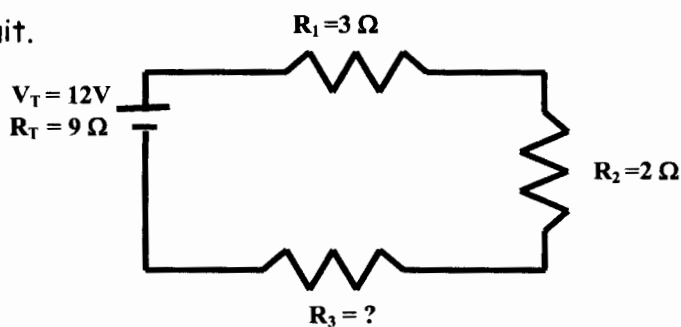
7 A



2. Complete the table for this circuit.

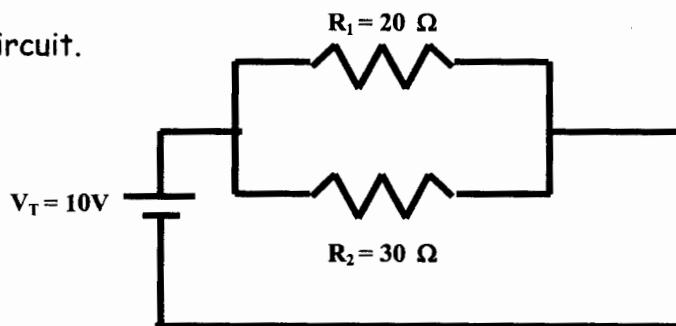
$$I = \frac{V}{R}$$

$$V_x = IR_x$$



$V_T = 12\text{ V}$	$V_1 = 3.9\text{ V}$	$V_2 = 2.4\text{ V}$	$V_3 = 5.2\text{ V}$
$R_T = 9\ \Omega$	$R_1 = 3\ \Omega$	$R_2 = 2\ \Omega$	$R_3 = 4\ \Omega$
$I_T = 1.3\text{ A}$	$I_1 = 1.3\text{ A}$	$I_2 = 1.3\text{ A}$	$I_3 = 1.3\text{ A}$

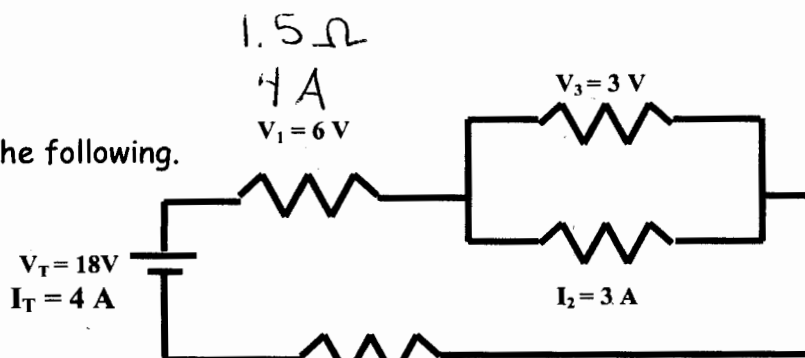
3. Complete the table for this circuit.



$V_T = 10\text{ V}$	$V_1 = 10\text{ V}$	$V_2 = 10\text{ V}$
$R_T = 12\ \Omega$	$R_1 = 20\ \Omega$	$R_2 = 30\ \Omega$
$I_T = 0.83\text{ A}$	$I_1 = 0.5\text{ A}$	$I_2 = 0.33\text{ A}$

$$I = \frac{V}{R}$$

4. Find the following.



$$I = \frac{V}{R}$$

$$V = IR$$

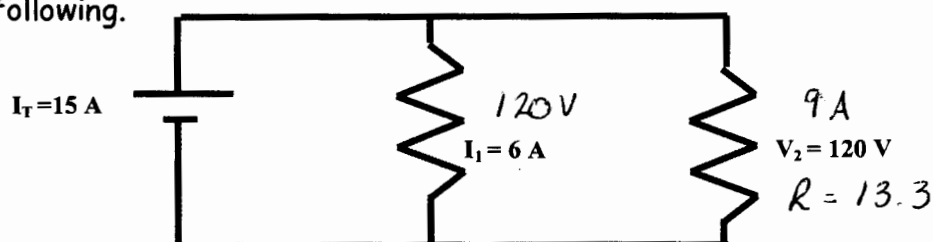
$$V_2 = \underline{3V}$$

$$V_4 = \underline{6V}$$

$$I_3 = \underline{1A}$$

$$I_4 = \underline{4A}$$

5. Find the following.



$$V_T = \underline{120V}$$

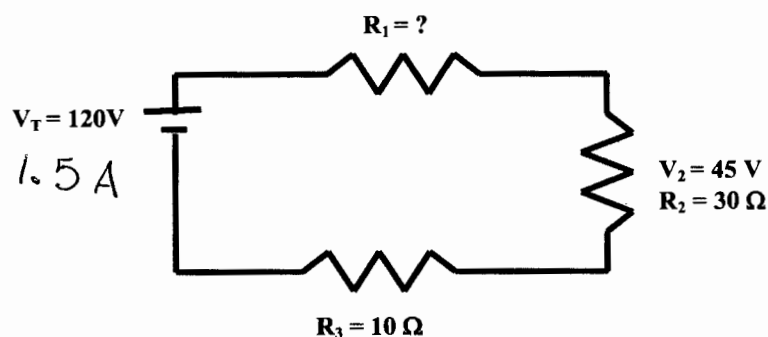
$$V_1 = \underline{120V}$$

$$I_2 = \underline{9A}$$

$$R_1 = \underline{20\Omega}$$

$$R_2 = \underline{13.3\Omega}$$

6. Find the following.



$$V_3 = \underline{15V}$$

$$V_1 = \underline{60V}$$

$$I_1 = \underline{1.5A}$$

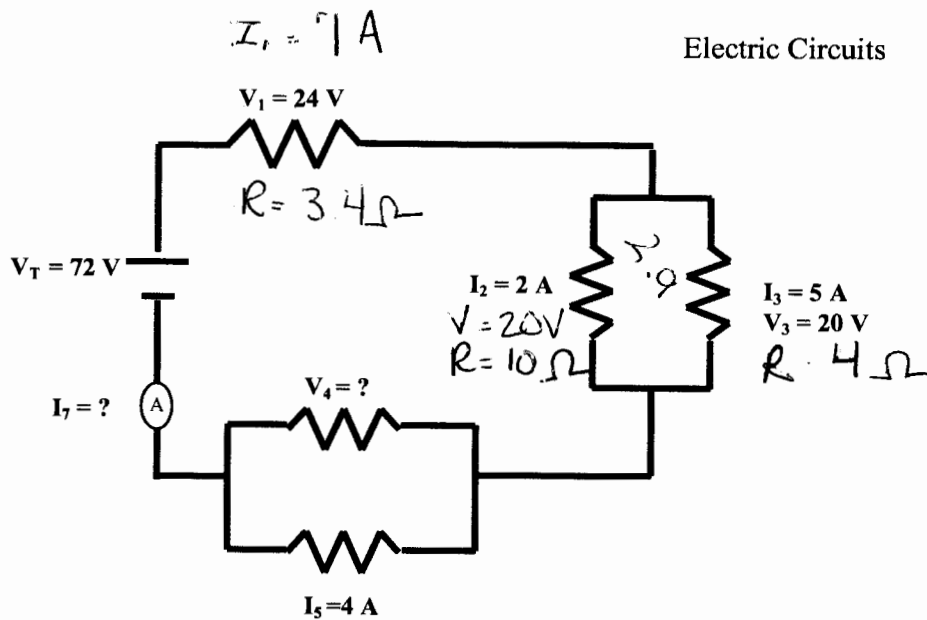
$$I_2 = \underline{1.5A}$$

$$I_3 = \underline{1.5A}$$

$$R_1 = \underline{40\Omega}$$

$$R_T = \underline{80\Omega}$$

7. Find the following.



$$I_1 = \underline{7\text{ A}}$$

$$V_2 = \underline{20\text{ V}}$$

$$V_4 = \underline{28\text{ V}}$$

$$V_5 = \underline{28\text{ V}}$$

$$I_4 = \underline{3\text{ A}}$$

$$I_7 = \underline{7\text{ A}}$$

$$I = \frac{V}{R}$$

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Circuit Math

$$I = \frac{V}{R}$$

$$V_x = I R_x$$

* Current is same throughout series.

* $I_T = I_1 + I_2 + \dots$ in parallel

* V is same throughout parallel.

* $V_T = V_1 + V_2 + \dots$ in series.

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

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

* I'm still trying to figure out #7 - see if you can beat me to the answer.