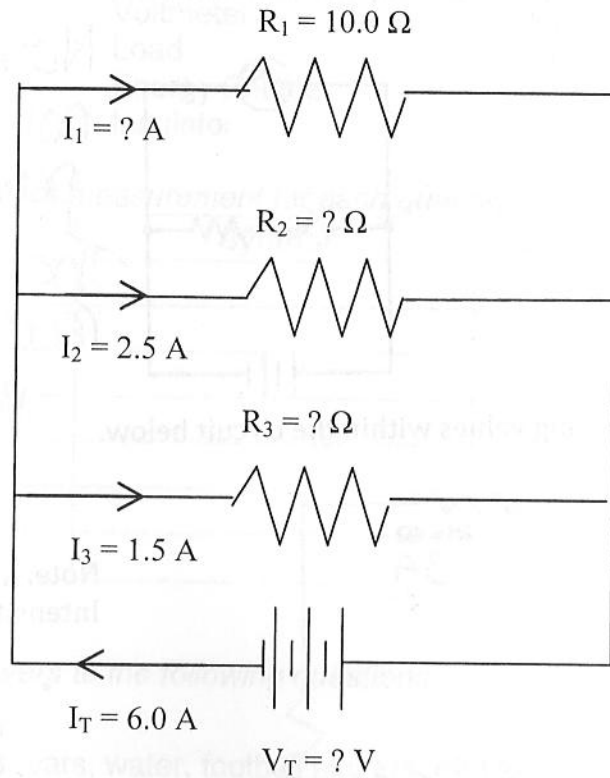
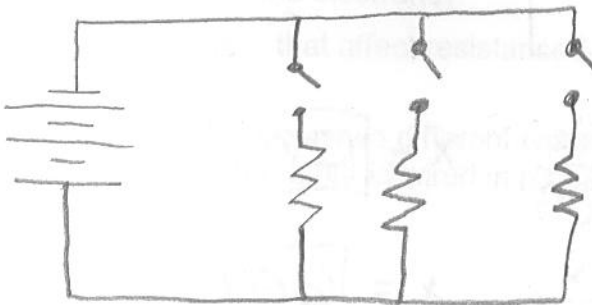


1. Is the circuit below series or parallel? Justify your answer.

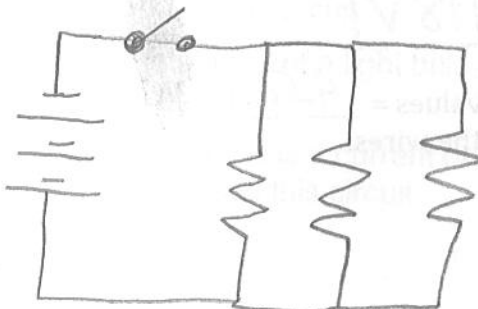
Parallel, there is more than one path for current to flow.



2. Redraw the circuit above to satisfy the following conditions.
- Each resistor must be controlled individually.



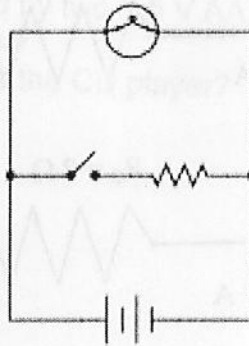
- A master switch controls all of the resistors.



3. A) What element is being controlled by the switch below?

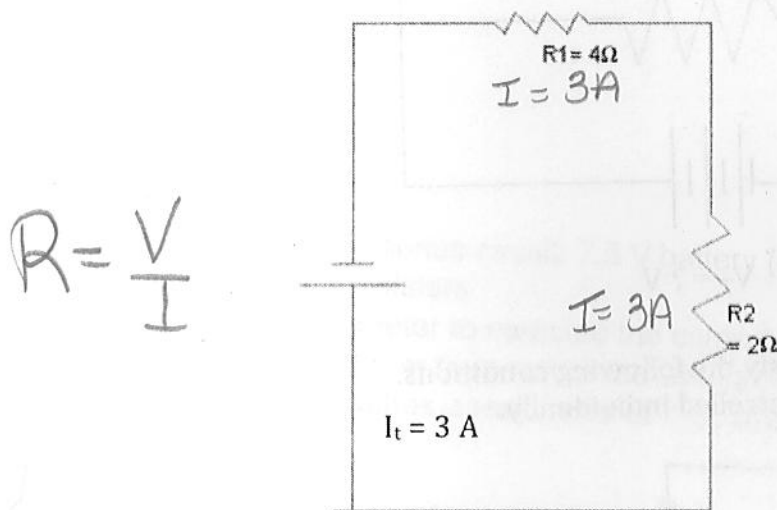
Resistor

B) What will happen to the brightness of the light bulb if the switch in this circuit is suddenly closed? Explain your answer.



Nothing, energy is not shared in a parallel circuit. The light is always receiving the same voltage.

4. Find the missing values within the circuit below.



Note:  $I_t$  = Total Current Intensity.

- The current intensity remains constant throughout the circuit.

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

Voltage at  $R_1$  ( $V_1$ ) =  $4\Omega = \frac{x}{3A}$        $x = \boxed{12V}$

Voltage at  $R_2$  ( $V_2$ ) =  $2\Omega = \frac{x}{3A}$        $x = \boxed{6V}$

Total Voltage ( $V_t$ ) =  $12V + 6V = \boxed{18V}$

Total Resistance ( $R_t$ ): Add up all resistor values =  $4\Omega + 2\Omega = \boxed{6\Omega}$

\* Ignore the resistance that exists within the wires.