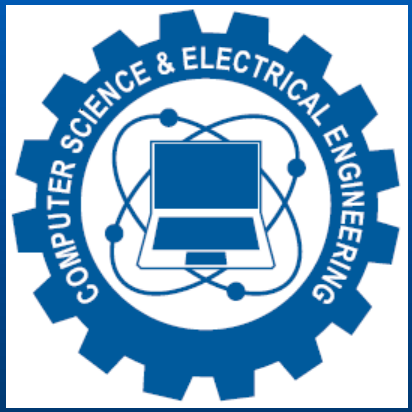
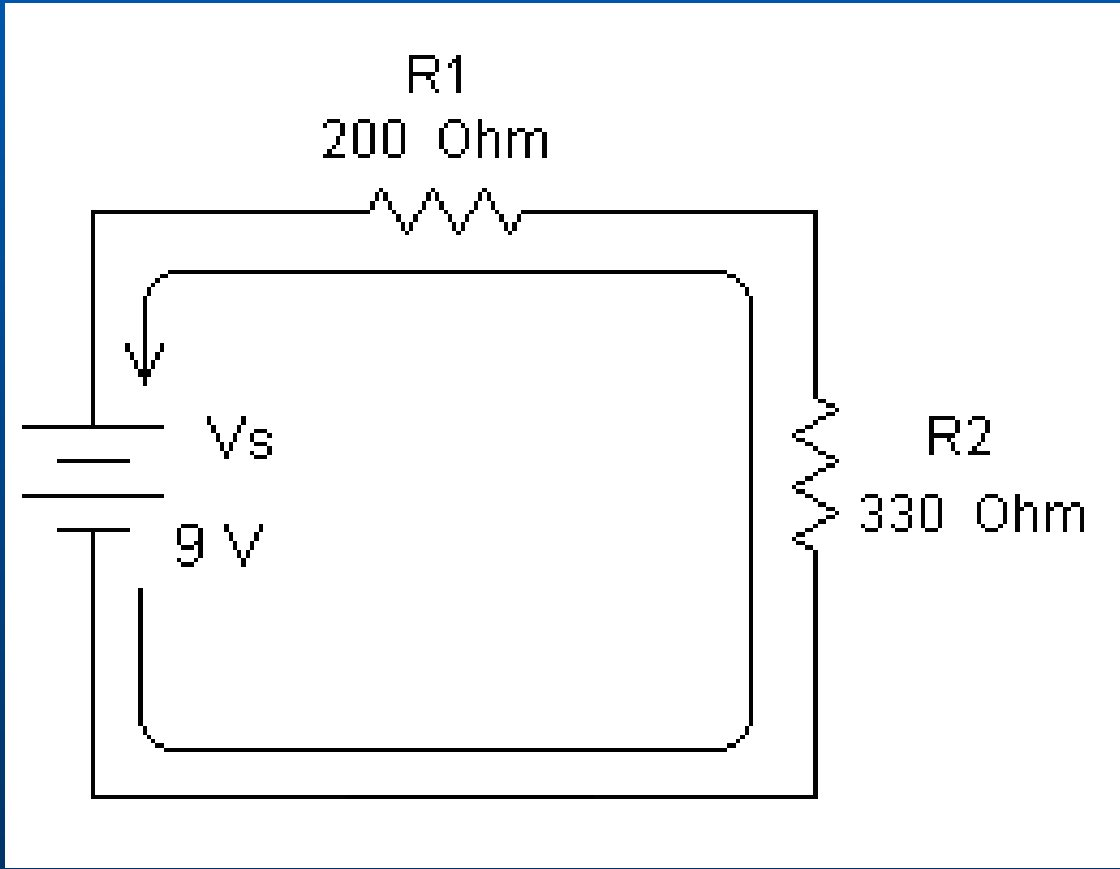
# *Basic Series Circuits/Networks*



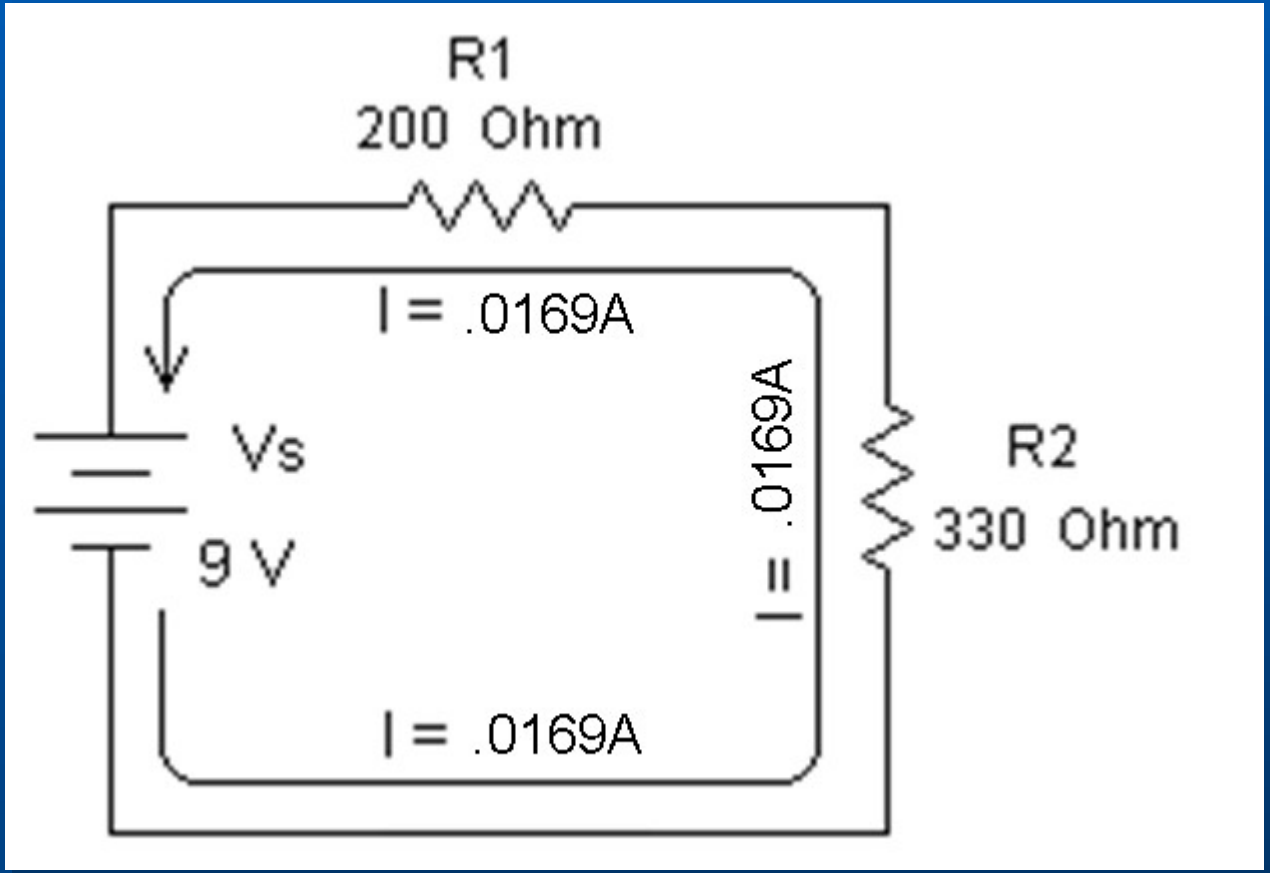
# *What is a Series Circuit/Network?*

- **circuit whose current flows along one and only single path**
- **current is the same at any point within the same path and through any resistor**
- **combined resistance is equal to the sum of all the resistors**
- **each resistor has a voltage dropped across it**

# *Single Path*



# *Same Current*

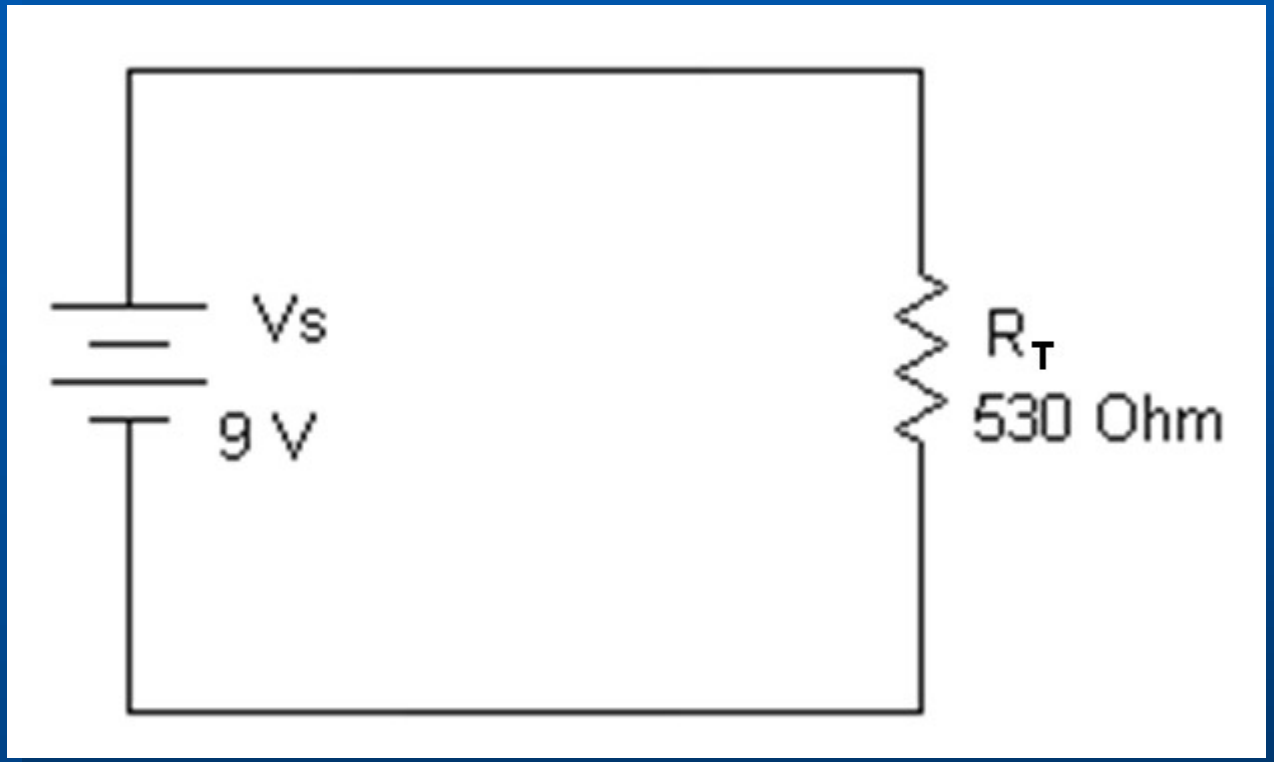


# *Combined Resistance ($R_T$)*

***Combined Resistance in Series = R1 + R2***

*530Ω = 200Ω + 330Ω*

# *Combined Resistance*

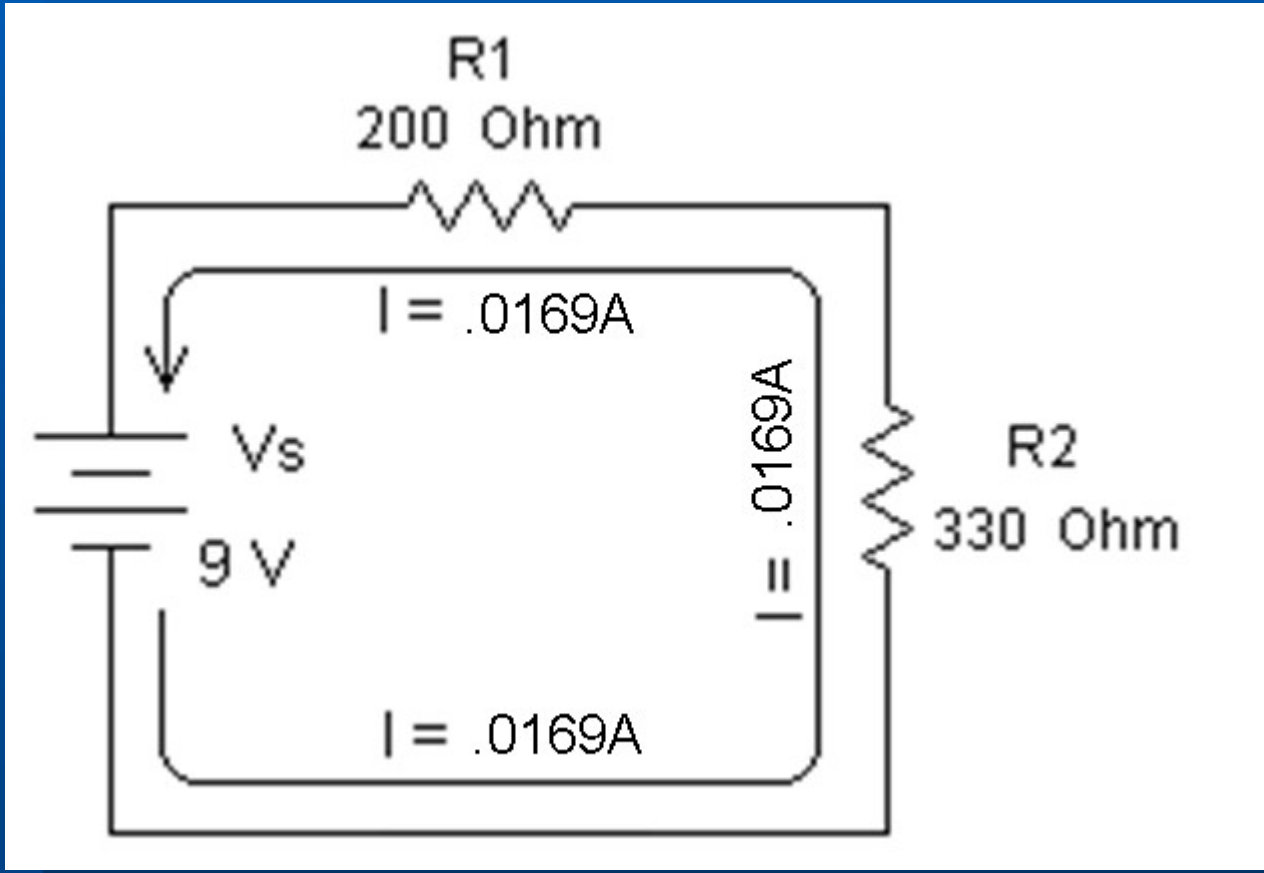


# Total Current ($I_T$)

**Total Current = $V_S$ ÷ $R_T$**

$.016A = 9V \div 530\Omega$

# *Same Current*



# Voltage Drops ($V_{R1}$ and $V_{R2}$)

$$V_{R1} = I_T \times R_1$$

$$3.2V = .016A \times 200\Omega$$

$$V_{R2} = I_T \times R_2$$

$$5.28V = .016A \times 330\Omega$$