Resistors in Parallel
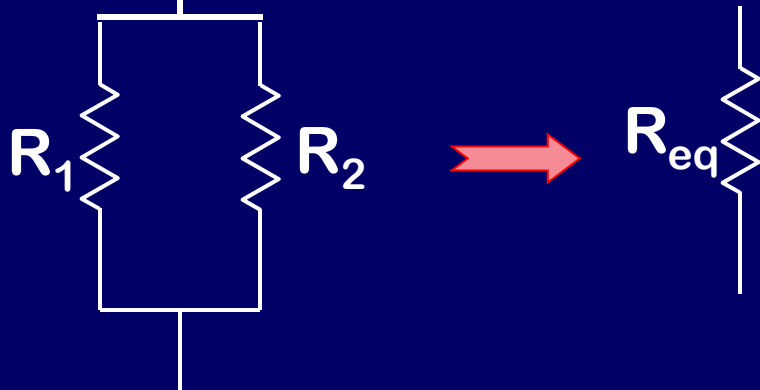
- Both ends of resistor are connected:
    - Current is split between two wires:

    $$I_1 + I_2 = I_{eq}$$

    - Voltage is same across each:

    $$V_1 = V_2 = V_{eq}$$

$$\frac{1}{R_{eq}} = \frac{I_{eq}}{V_{eq}} = \frac{I_1 + I_2}{V_{eq}} = \frac{I_1}{V_{eq}} + \frac{I_2}{V_{eq}} = \frac{1}{R_1} + \frac{1}{R_2}$$