# More Series and Parallel Circuits

Wheeler HS Fall 2018

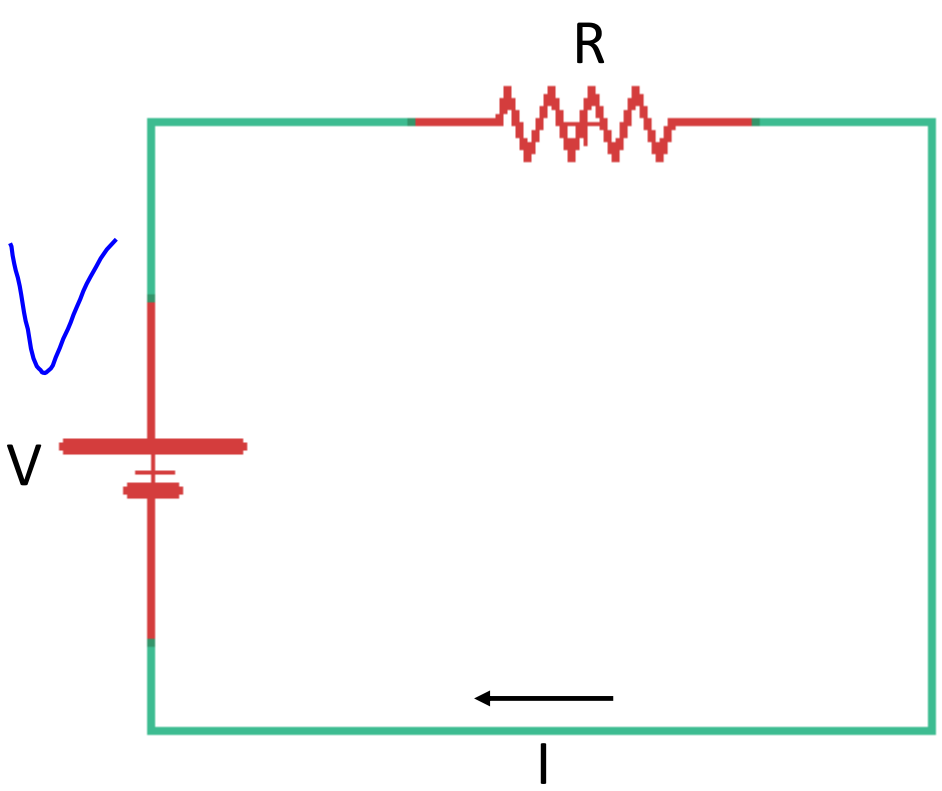
# Basic Circuit

V = IR

$I = \frac{V}{R} = \frac{9V}{1000\Omega}$

$I = .009\ A$

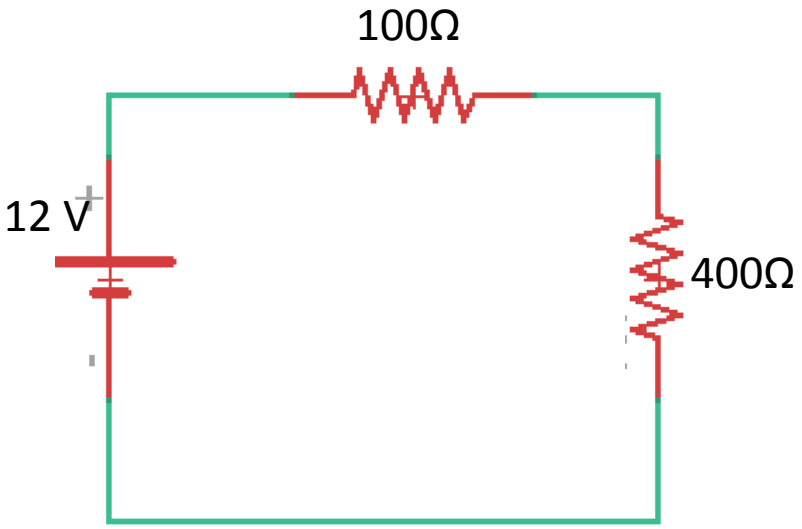
9 V



# Simplifying Series

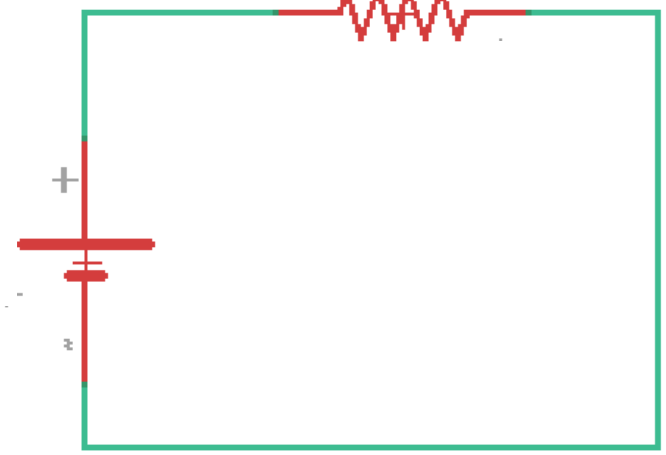
Equivalent resistance for series circuits adds together

$$R_{total} = R_1 + R_2 + \cdots$$




100 + 400

500Ω



# Another Series Example

1 kΩ

12 V

1.2 kΩ

4 kΩ

1K + 1.2K + 4K

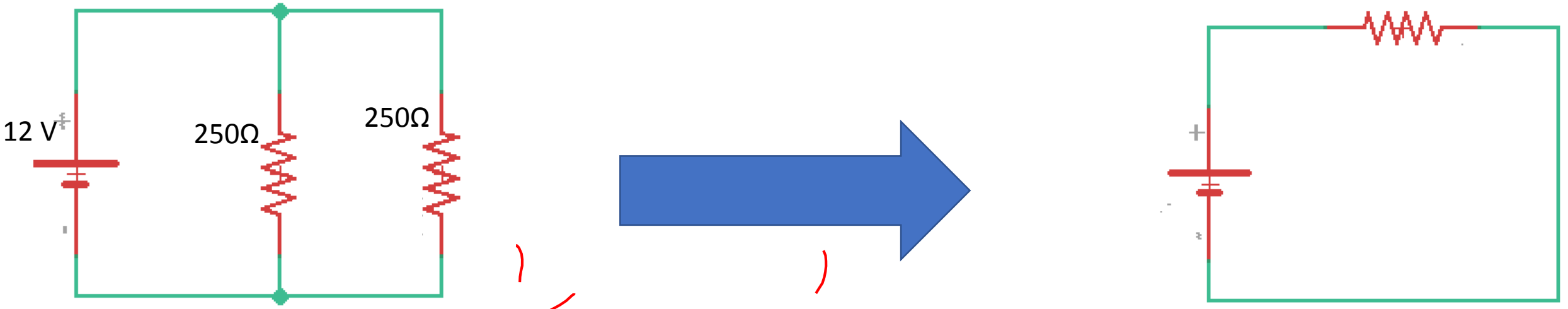
6.2K

6.2K = 6200Ω

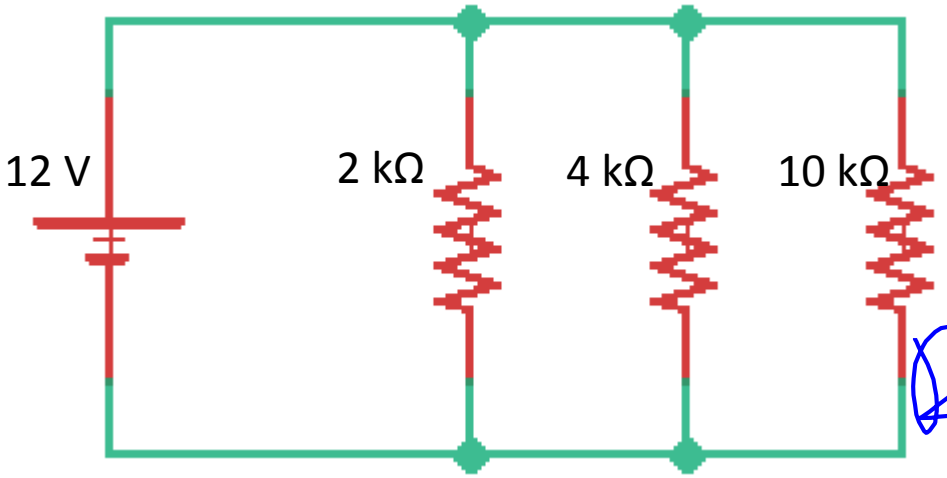
# Simplifying Parallel

Equivalent resistance for parallel circuits:

$$\frac{1}{R_{total}} = \frac{1}{R_1} + \frac{1}{R_2} + \cdots$$



# Another Parallel



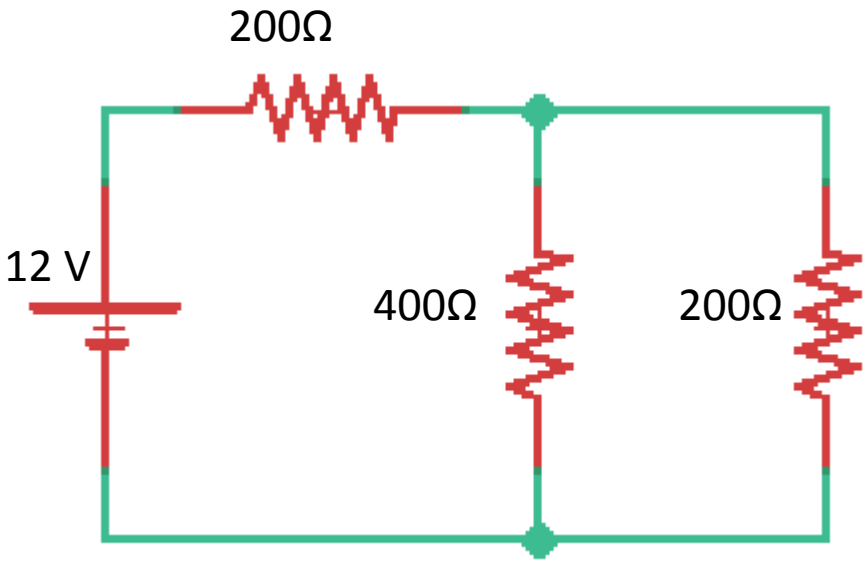

$$\frac{1}{R_T} = \frac{1}{2000} + \frac{1}{4000} + \frac{1}{10000}$$

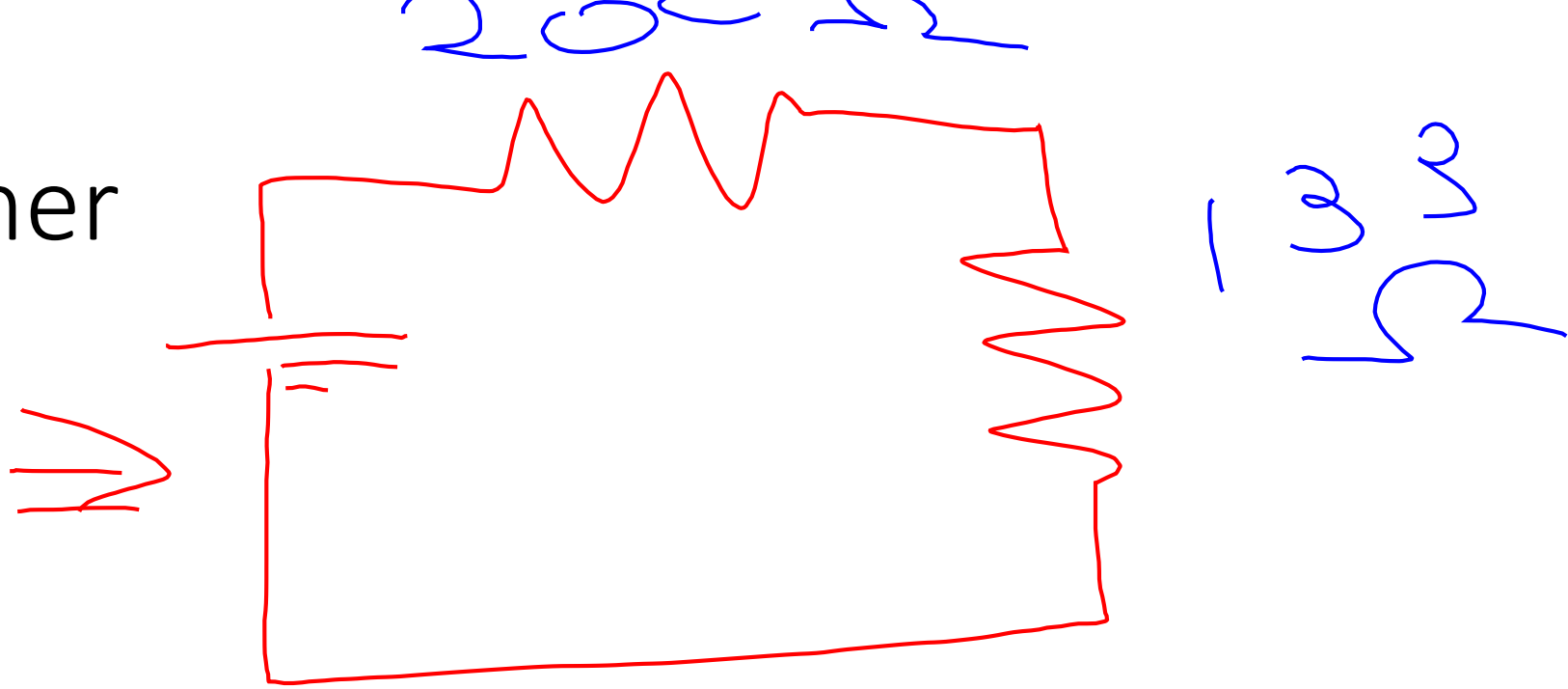
$$\frac{1}{R_T} = .00175$$

$$R_T = \frac{1}{.00175}$$

$$R_T = 571\ \Omega$$

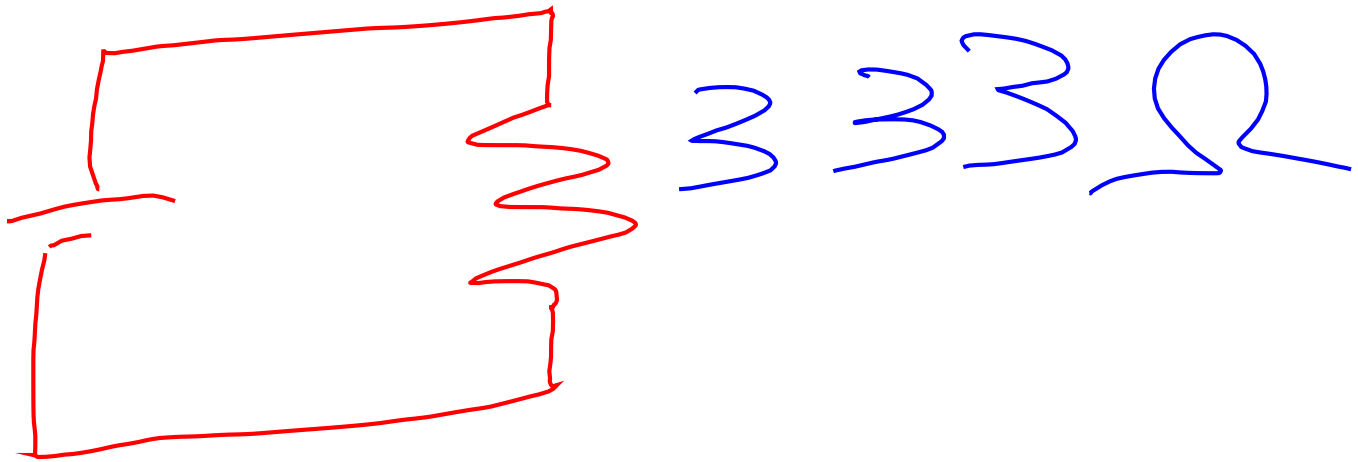
# Putting it together




$\frac{1}{R_T} = \frac{1}{200} + \frac{1}{400} + \frac{1}{200}$

$\frac{1}{R_T} = .00175$



# More!