

Ohm's Law Review:

Determine the initial current, knowing the following:

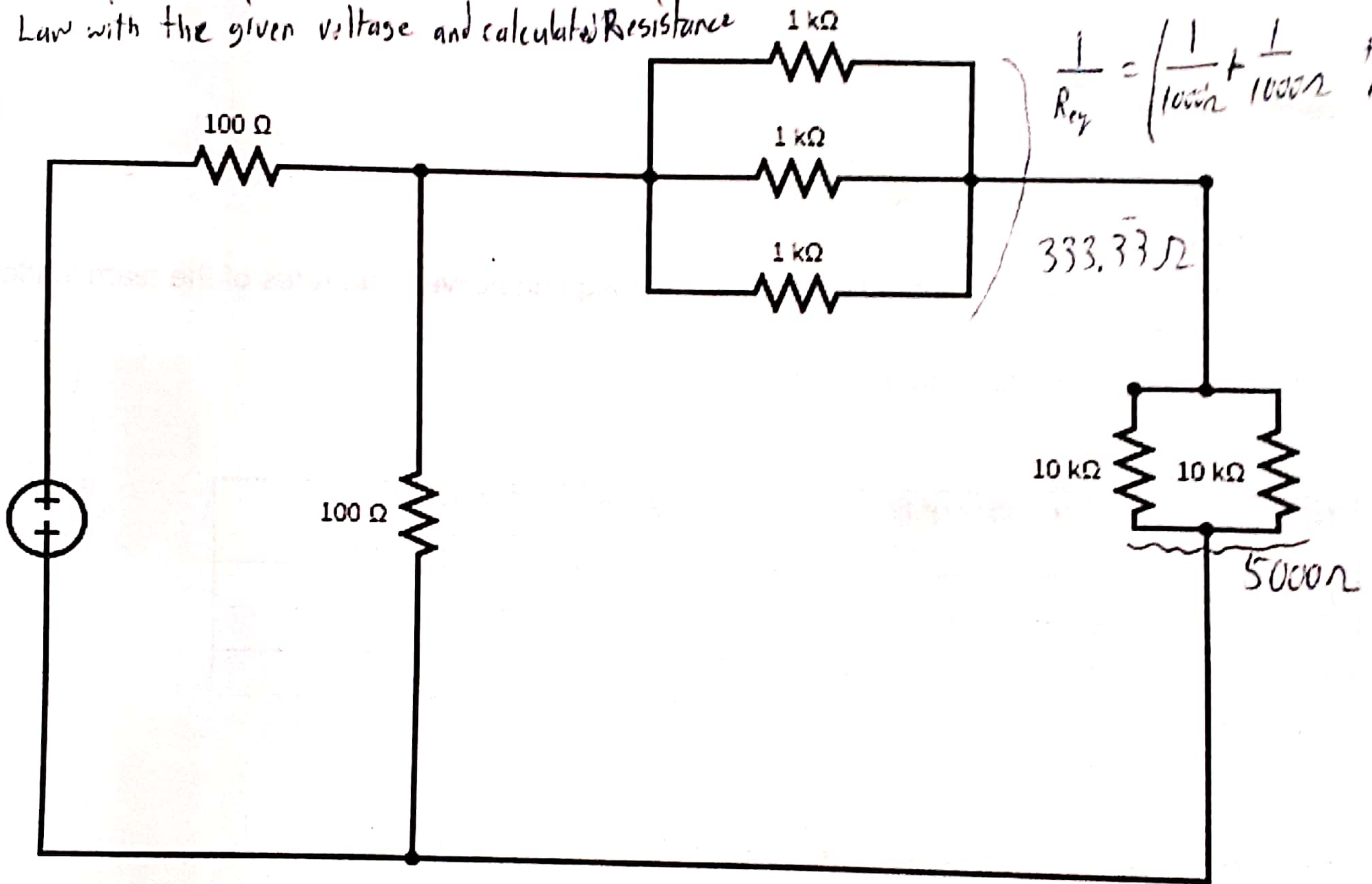
- Ohm's Law $V = IR$, $V = 12V$ in this case
- It may be helpful to redraw circuits with equivalent resistors

1) Simplify using Kirchoff's Rule for Parallel Resistors

$$\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$$

2) Use Ohm's Law with the given voltage and calculate Resistance

$$V = IR$$



Total Voltage 12V (given)
 Total Resistance ~~198~~ 200Ω
 Total Current 0.061A

$$R_{Total} = 100\Omega + \left(\frac{1}{\frac{1}{1000} + \frac{1}{5333.33}} \right)^{-1}$$

$$= 100\Omega + 98,160\Omega$$

$$= 198,160$$

$$I = \frac{V}{R} = \frac{12V}{198,160\Omega} = 0.060557A$$