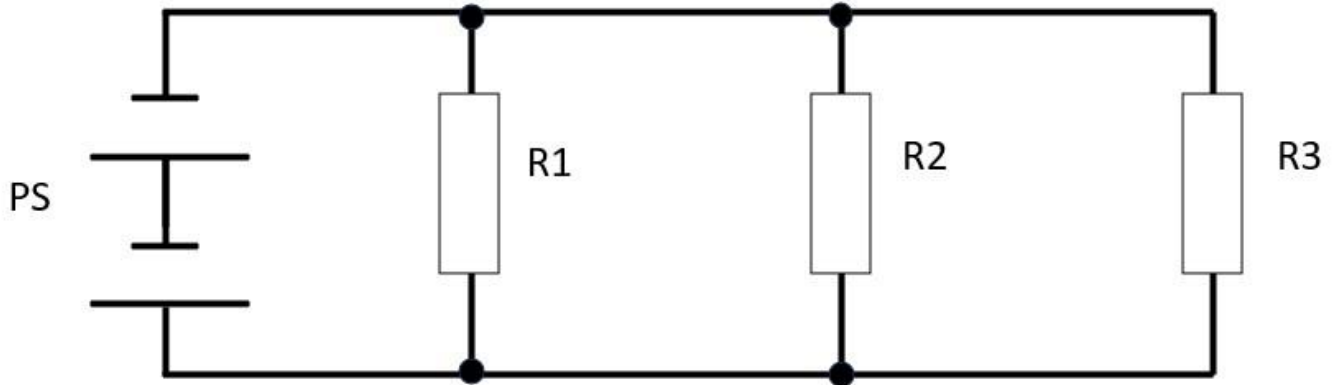


## Lesson 4 - Answers

Q1. Refer to Figure 1 and calculate the currents and populate Table 1 with the results.

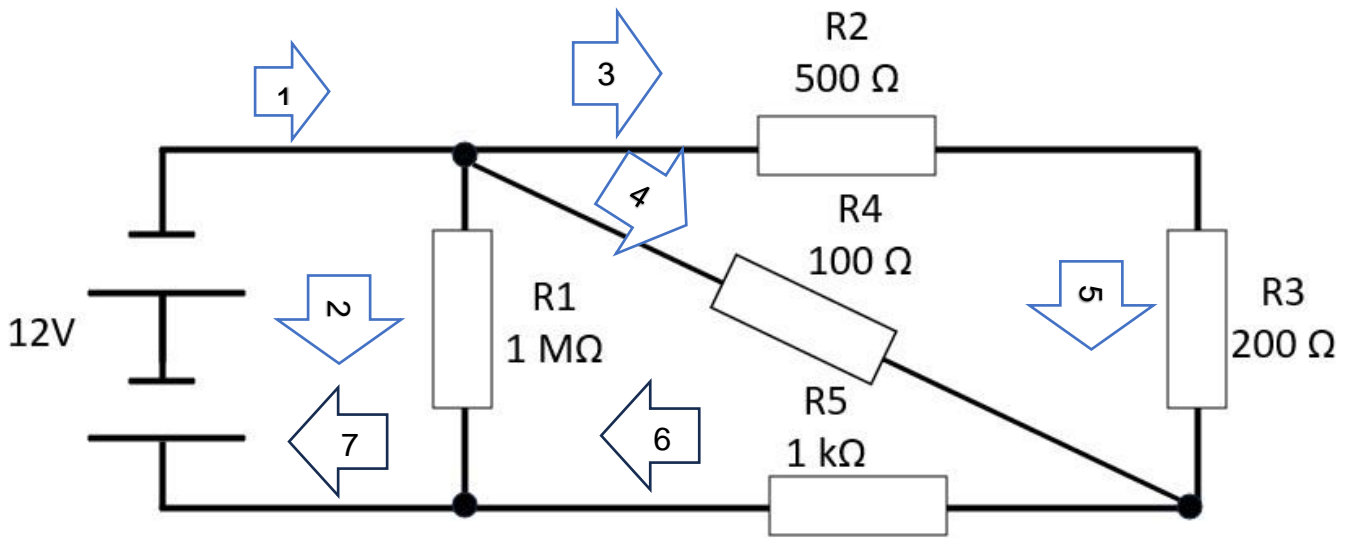


Question	PS	R1	R2	R3
1	10 V	100 $\Omega$	100 $\Omega$	100 $\Omega$
2	15 V	10 M $\Omega$	5 M $\Omega$	1 M $\Omega$
3	100 V	1 K $\Omega$	20 $\Omega$	1 k $\Omega$

$I_{Total In}$	$I_{R1}$	$I_{R2}$	$I_{R3}$	$I_{Total Out}$
<b>0.33 A</b>	<b>0.11 A</b>	<b>0.11 A</b>	<b>0.11 A</b>	<b>0.33 A</b>
<b>19 <math>\mu</math>A</b>	<b>1.5 <math>\mu</math>A</b>	<b>3 <math>\mu</math>A</b>	<b>15 <math>\mu</math>A</b>	<b>19.5 <math>\mu</math>A</b> (Rounding)
<b>5.2 A</b>	<b>0.1 A</b>	<b>5 A</b>	<b>0.1 A</b>	<b>5.2 A</b>

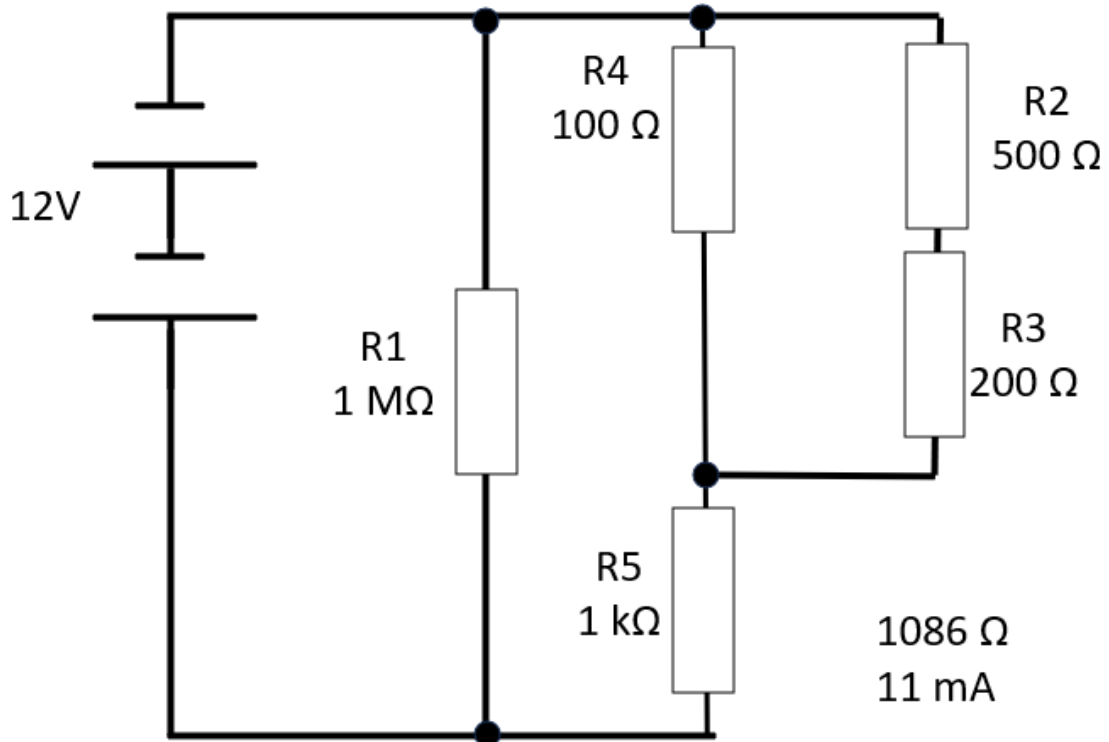
Q2

Prove Kirchhoff's current law.

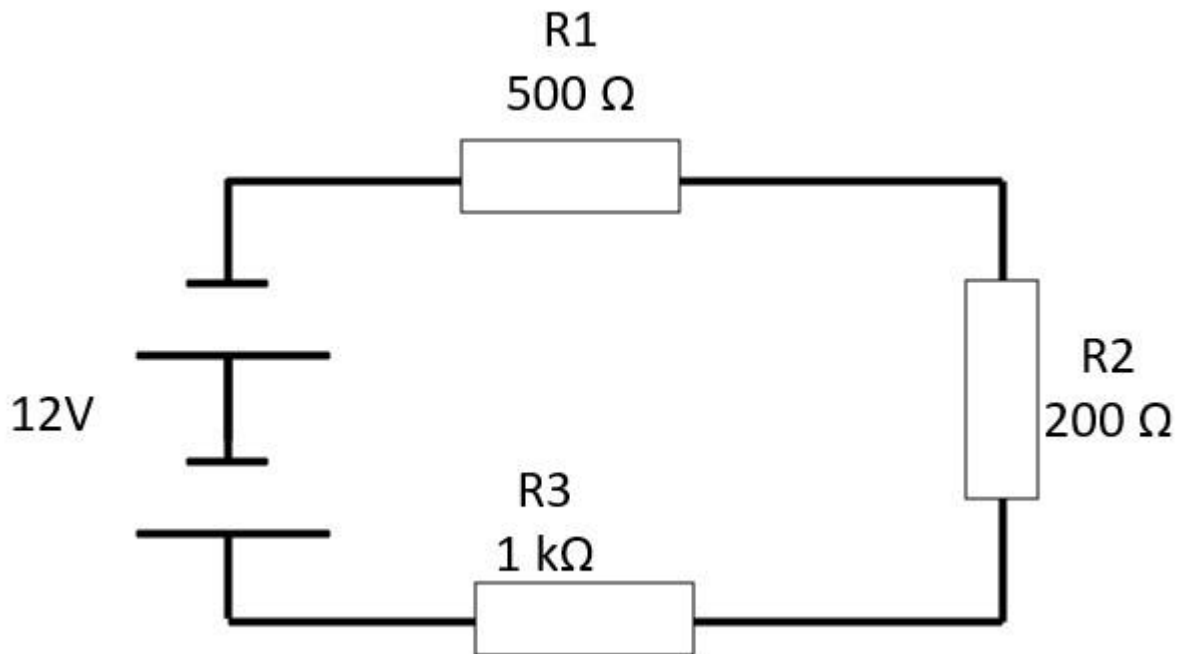


Hint: Redraw the equivalent circuit.

1	2	3	4	5	6	7
11 mA	12 μA	9.6 mA	1.4 mA	9.6 mA	10 mA	11 mA



Q3



V in	V R1	V R2	V R3	V Total
12 V	3.53 V	1.4 V	7 V	11.93 V Rounding

7 mA

Q4 Now

PS = 100 V

R1 = 100 Ω

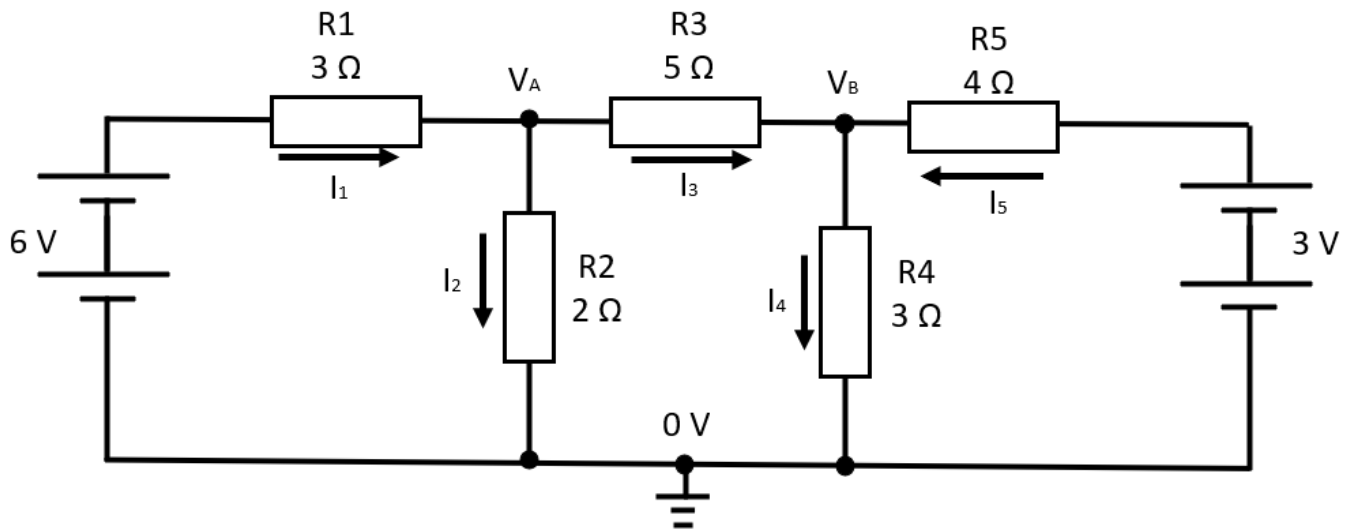
R2 = 1 kΩ

R3 = 500 Ω

V in	V R1	V R2	V R3	V Total
100 V	6.25 V	62.5 V	31.25	100 V
62.5 mA				

Q6 Solve for the following.

VA	VB	I1	I2	I3	I4	I5

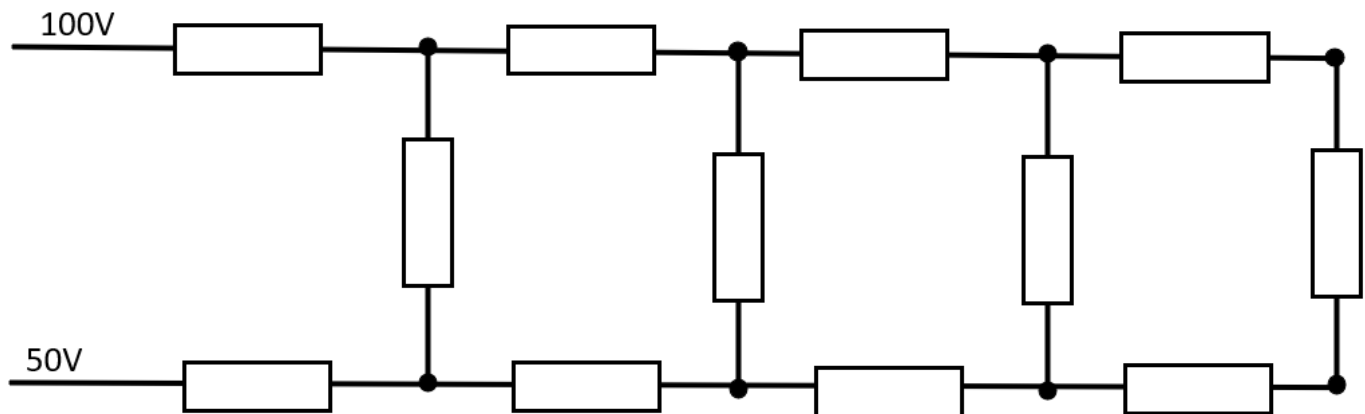


[Click on here to see the calculations](#)

Q6

Calculate  $R_{Total}$  and  $I_{Total}$

All resistors are  $1k\Omega$



$R_{total} = 2732.1 \Omega$

$I_{Total} = 18 \text{ mA}$

