

Simple Circuits

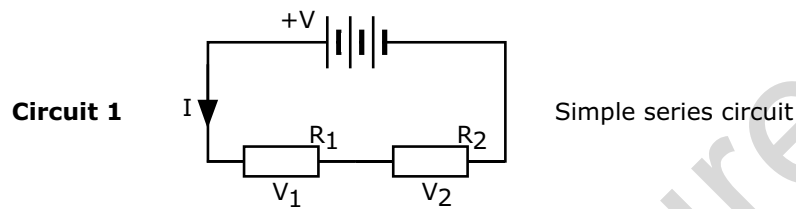
Name & Set

For each of the circuits shown in the diagrams for questions 1, 2, 3 & 4 below carry out the calculations necessary to complete the table that accompanies it.

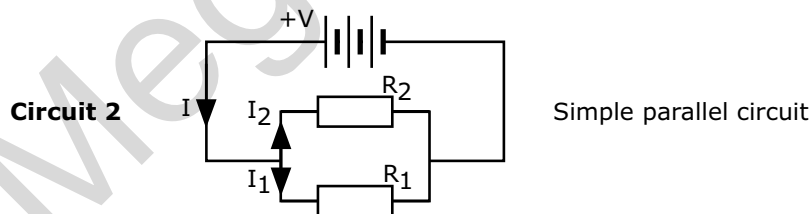
In each case the column headings refer to the labels on the diagram directly above the table. 'Eqv R' stands for the *equivalent resistance* of the whole circuit.

The data on each row represents a *different* circuit.

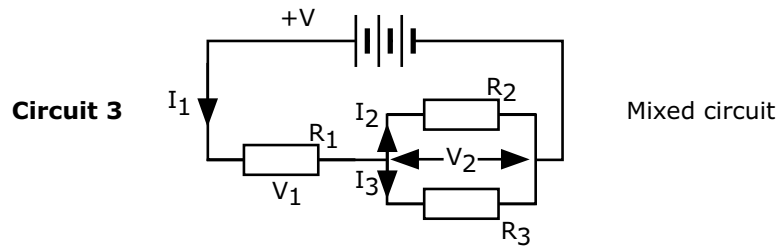
You should show all working on A4. Do not simply fill in the blank spaces.



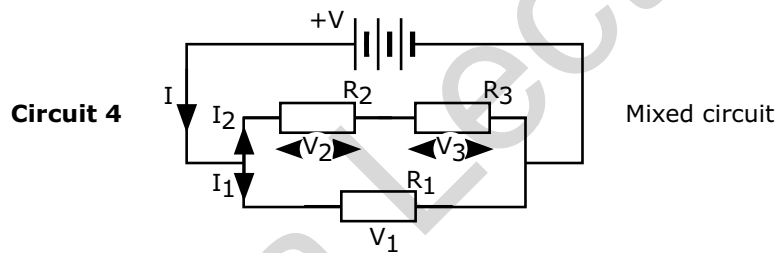
	V	I	R_1	R_2	$Eqv R$	V_1	V_2
A			3Ω	2Ω			
B		2 A	5Ω		6Ω		
C		0.4 A				1 V	0.6 V
D	11 V		900Ω	200Ω			2 V
E		0.05 A			$13 \text{ k}\Omega$	150 V	500 V



Circuit 2	V	I	R_1	R_2	$Eqv R$	I_1	I_2
A	15 V		5Ω	3Ω			
B		10 mA		$4 \text{ k}\Omega$	$0.8 \text{ k}\Omega$		2 mA
C			2.4Ω		2Ω	625 mA	125 mA
D	4 V	0.3125 A		64Ω		0.25 A	
E			100Ω	2Ω		0.09 A	4.5 A
F					2.1Ω	1 A	2.3 A



	V	I_1	R_1	R_2	R_3	$Eqv R$	I_2	I_3	V_1	V_2
A	11 V		2 Ω	4 Ω	6 Ω					
B	1.5 V	50 mA		60 Ω	20 Ω	30 Ω				
C				100 Ω	300 Ω	275 Ω	0.06A	0.02A		
D	20 V		6 k Ω		5 k Ω	10 k Ω				
E			1 Ω	5 Ω		3 Ω			3 V	6 V



Circuit 4	V	I	R_1	R_2	R_3	$Eqv R$	I_1	I_2	V_2	V_3
A	1.5 V		3 Ω	2 Ω	1 Ω					
B		2 A	5 Ω		30 Ω	4.5 Ω				
C		0.2 A	100 Ω			87.5 Ω			5 V	12.5V
D							10 mA	2 mA	2.4 V	0.6 V
E			2 Ω	1 Ω		1.8 Ω	13.5A			
F						0.99 Ω		0.02A	0.02V	1.98V