



Basic Electricity – Unit 6: Other Basic Circuit Fundamentals

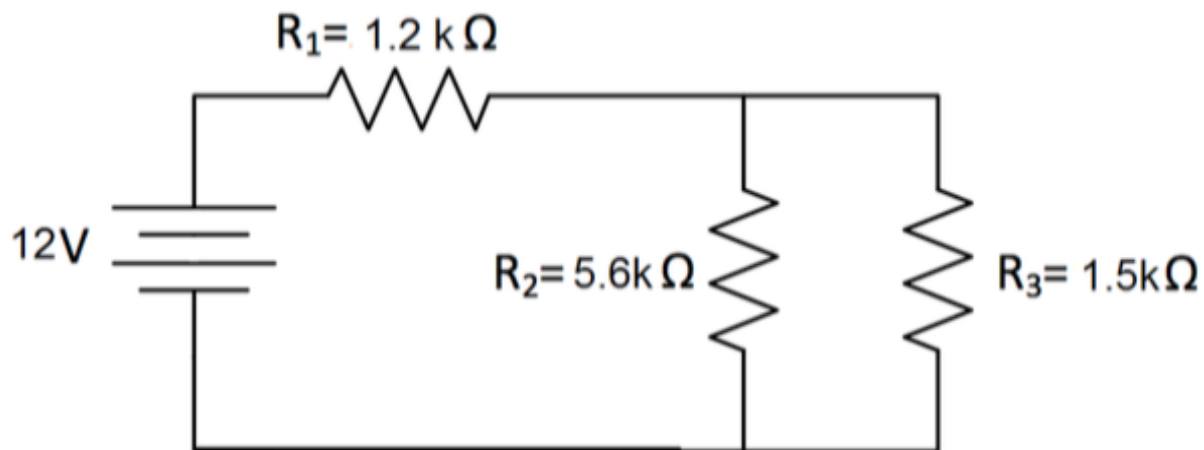
Lab 4

1. List the resistor color code for each resistor.

R1 = _____

R2 = _____

R3 = _____



Circuit 1

Calculate voltage and current. Show all calculations. This will include a formula, substitution of your numbers into the formula and the answer.

Make a data table, using Excel, of your answers. Put the data in tabular form (columns and rows).

Construct the circuit. Measure and record the voltage, currents and resistances.

Put this information in your data table to compare the calculated data with the measured data. Example below.

Quantity	Calculated	Measured
Rt	25 Ω	24.7 Ω

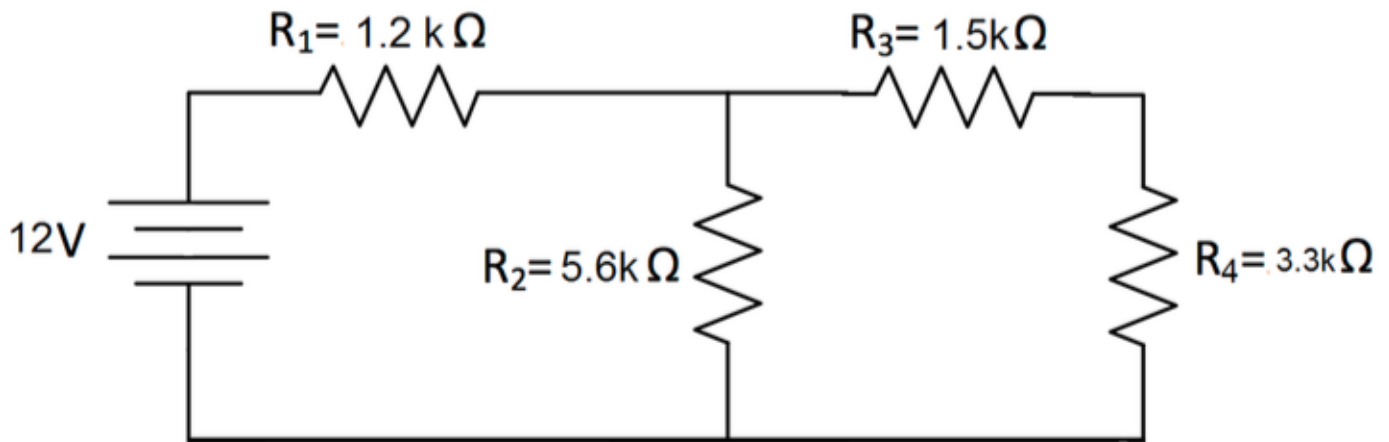




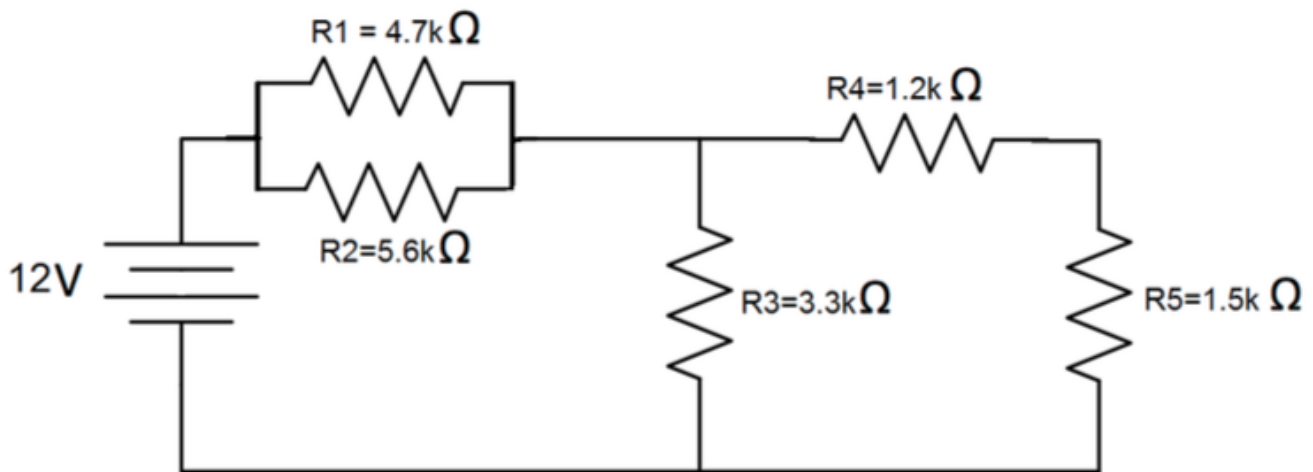
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Do the same for the following two circuits.



Circuit 2



Circuit 3





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Student Fill In Sheet

	COLOR CODE				Given Value	Tolerance Range	Measured Value
	1st Band	2nd Band	3rd Band	4th Band			
R1							
R2							
R3							
R4							
R5							

CIRCUIT 3

	Calculated	Measured
Et		
Rt		
It		
ER1		
IR1		
ER2		
IR2		
ER3		
IR3		
ER4		
IR4		
ER5		
IR5		

CIRCUIT 2

	Calculated	Measured
Et		
Rt		
It		
ER1		
IR1		
ER2		
IR2		
ER3		
IR3		
ER4		
IR4		

CIRCUIT 1

	Calculated	Measured
Et		
Rt		
It		
ER1		
IR1		
ER2		
IR2		
ER3		
IR3		





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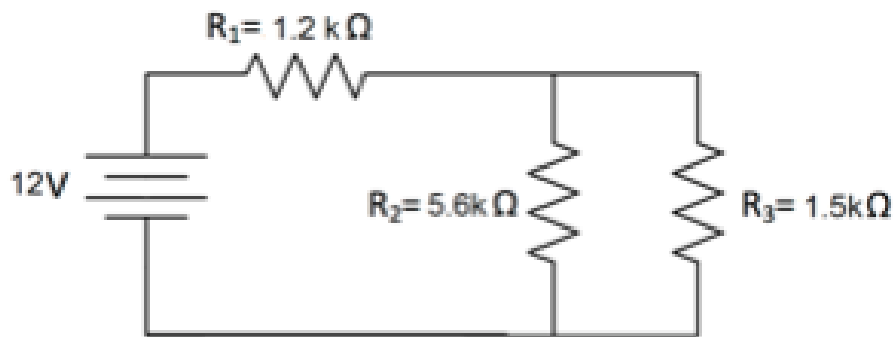
Solution:

1. List the resistor color code for each resistor.

R1 = 1.2k Ω Brown Red Red Gold

R2 = 5.6k Ω Green Blue Red Gold

R3 = 1.5k Ω Brown Green Red Gold



Circuit 1



$$R_{2,3} = 1183.098591549296 \Omega \quad R_t = 2383.098591549296 \Omega$$

$$I_t = 0.0050354609929078 \text{ A.}$$

$$I_{R1} = I_t = 0.0050354609929078 \text{ A.}$$

$$E_{R1} = 6.042553191489362 \text{ V.}$$

$$E_{R2} = E_{R3} = 5.957446808510638 \text{ V.}$$

$$I_{R2} = 0.001063829787234 \text{ A.}$$

$$I_{R3} = -0.0039716312056738 \text{ A.}$$





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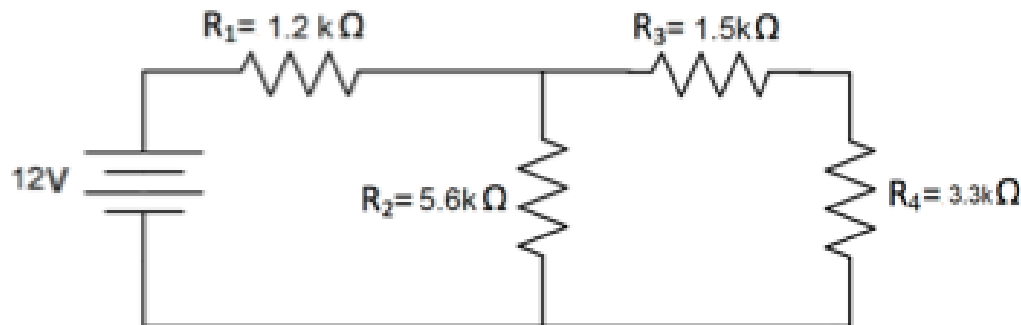
Lab 4

1. Calculate voltage and current. Show all calculations. This will include a formula, substitution of your numbers into the formula and the answer.
2. Make a data table, using Excel, of your answers. Put the data in tabular form (columns and rows).
3. Construct the circuit.
4. Measure and record the voltage, currents and resistances.
5. Put this information in your data table to compare the calculated data with the measured data.

Example:

Quantity	Calculated	Measured
R_t	25Ω	24.7Ω

6. Do the same for the following two circuits.



Circuit 2

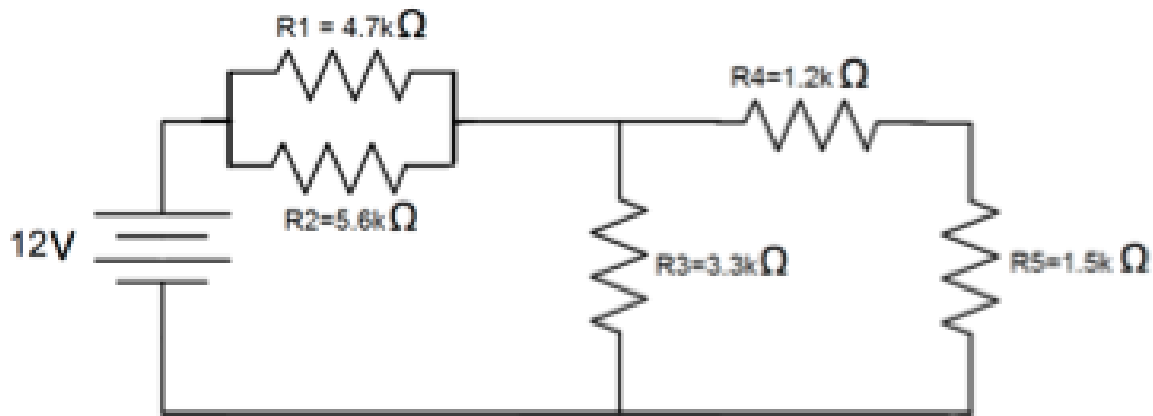
- $R_1 = 1.2 \text{ k}\Omega$ Brown Red Red Gold
 $R_2 = 5.6 \text{ k}\Omega$ Green Blue Red Gold
 $R_3 = 1.5 \text{ k}\Omega$ Brown Green Red Gold
 $R_4 = 3.3 \text{ k}\Omega$ Orange Orange Red Gold





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Lab 4



Circuit 3

- R1 = 4.7k Ω Yellow Violet Red Gold
- R2 = 5.6k Ω Green Blue Red Gold
- R3 = 3.3k Ω Orange Orange Red Gold
- R4 = 1.2k Ω Brown Red Red Gold
- R5 = 1.5k Ω Brown Green Red Gold



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