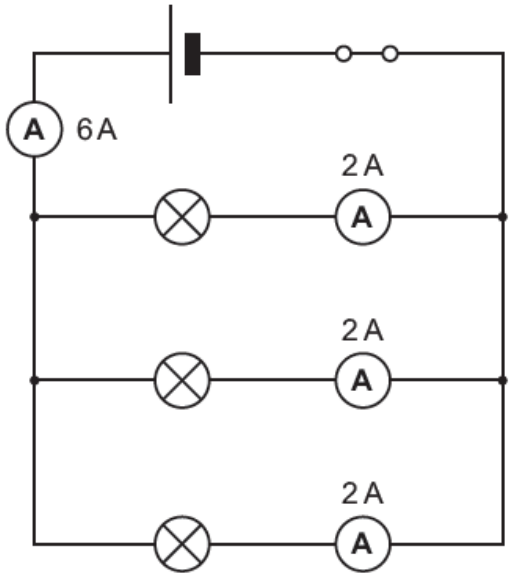
Electricity – Checkpoint Sec 1 Physics

1. No.10

Jamila connects an electrical circuit.



She uses **four** ammeters in the electrical circuit.

There is an ammeter reading next to each ammeter symbol.

(a) (i) What type of electrical circuit is shown in the diagram?

..... [1]

(ii) Explain what is happening in the electrical circuit.

Use the readings on the ammeters in your answer.

.....

.....

.....

..... [2]

(b) Write down the name of the equipment that measures **voltage**.

..... [1]

2. No.6

Oliver investigates how the number of lamps in a circuit affects the current.

He connects the lamps in series.

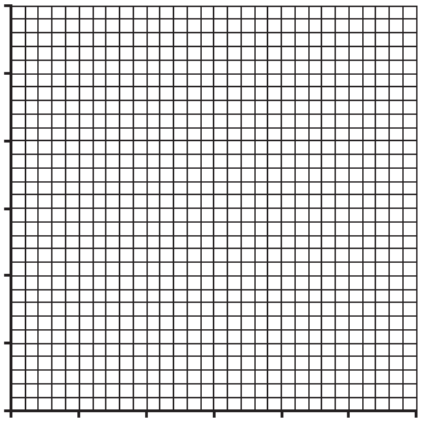
He uses identical lamps.

Oliver writes his results in a table.

number of lamps	current in A
1	6.0
2	3.0
3	2.8
4	1.5
5	1.0

(a) Draw a graph of the results by:

- labelling the number of lamps on the x-axis
- labelling the current on the y-axis
- plotting all the points.



[3]

(b) Complete the graph by:

- putting a circle around the anomalous result
- joining the other points with a smooth curve. [2]

(c) Describe **two** patterns in his results.

1 .....

2 .....

[2]

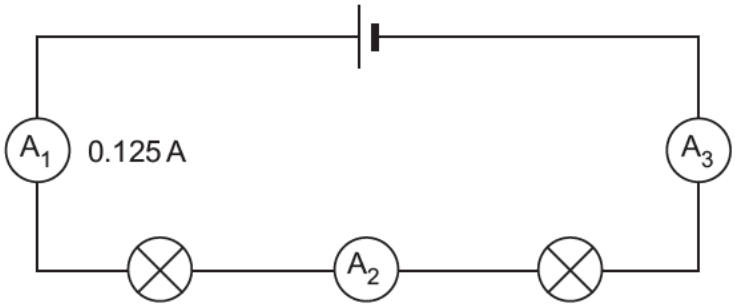
3. No.6

Mia measures the current in different electrical circuits.

(a) Write down the name of the piece of equipment used to measure current.

..... [1]

(b) Mia connects an electrical circuit with one cell and two lamps.



The reading on $\mathbf{A_1}$ is 0.125 A.

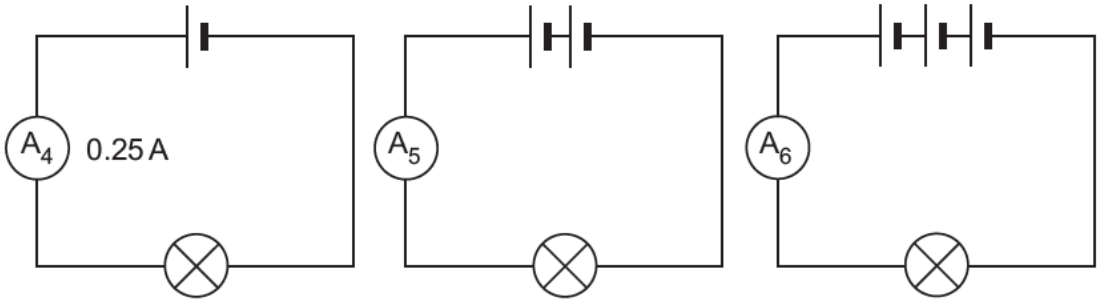
Write down the **two** missing readings.

The reading on $\mathbf{A_2}$ is ..... A.

The reading on $\mathbf{A_3}$ is ..... A.

[1]

(c) Mia connects **three** more circuits using the same size cells and lamps.



The reading on $\mathbf{A_4}$ is 0.25 A.

Write down the **two** missing readings.

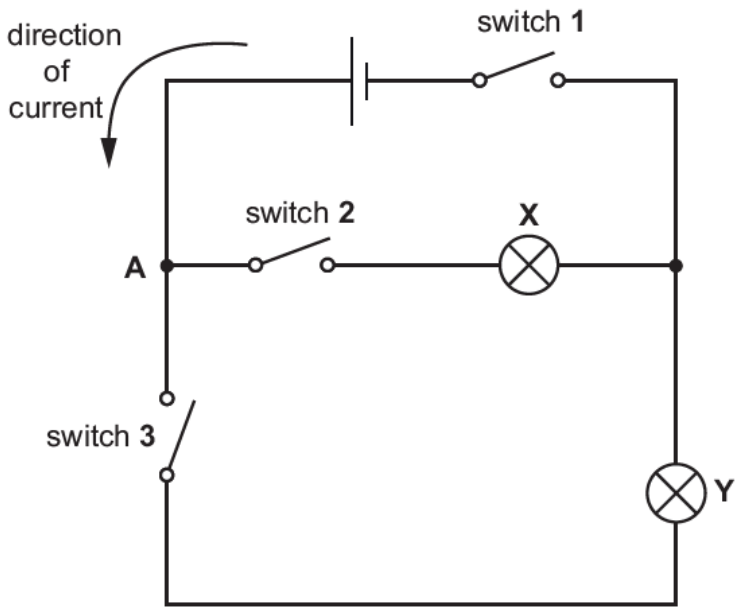
The reading on $\mathbf{A_5}$ is ..... A.

The reading on $\mathbf{A_6}$ is ..... A.

[2]

4. No.11

Jamila builds this electrical circuit.



(a) What type of electrical circuit is this?

Circle the correct answer.

electrostatic **magnetic** **parallel** **series**

[1]

(b) Jamila wants to turn lamp **X** on but leave lamp **Y** off.

What must she do?

.....

[1]

(c) Jamila wants to turn lamp **Y** on but leave lamp **X** off.

What must she do?

.....

[1]

(d) Jamila closes all the switches.

What happens to the current at point **A**?

.....

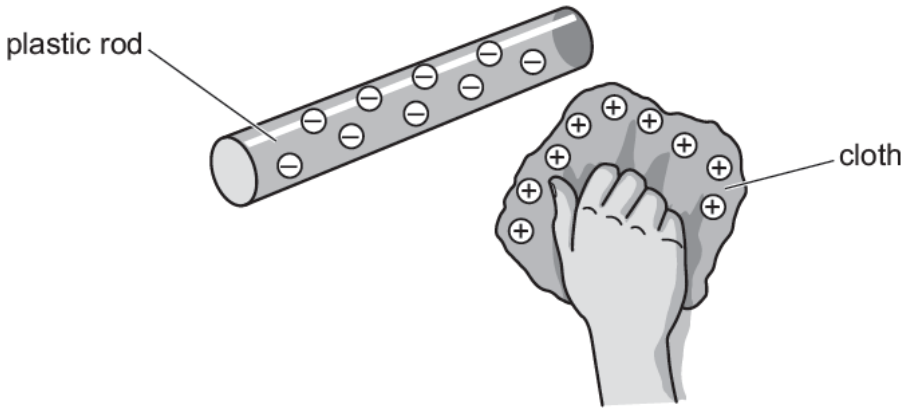
.....

[1]

5. No.12

Some objects become electrically charged.

(a) Oliver draws a diagram of two charged objects.



Explain how the objects become charged.

.....

.....

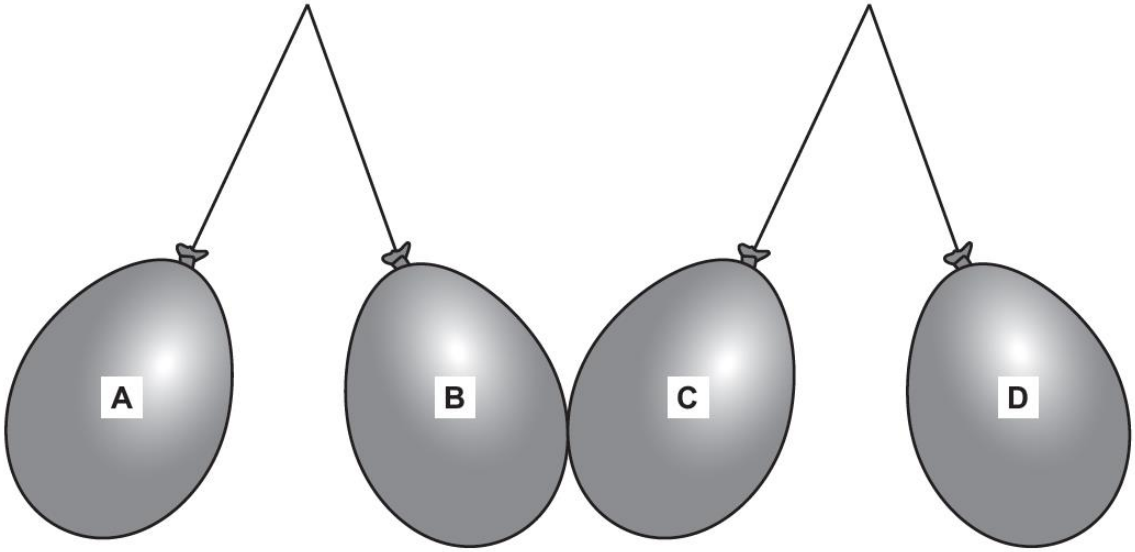
..... [2]

(b) Complete the sentences.

Opposite charges ..... .

Like charges ..... . [1]

(c) Oliver puts charged balloons next to each other.



Balloon **A** has a positive charge.

What are the charges on the other balloons?

A is positive.

B is ..... .

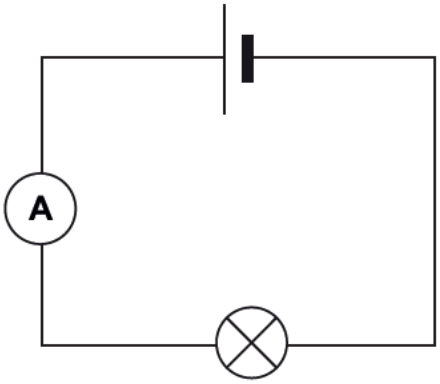
C is ..... .

D is ..... . [1]

6. No.15

Aiko wants to measure different quantities in electrical circuits.

(a) She connects this electrical circuit.



Complete the sentences.

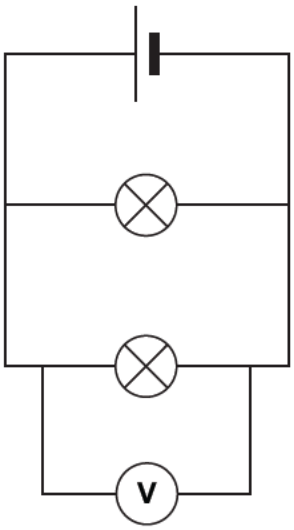
The circuit diagram shows a ..... circuit.

The component shown by (A) is ..... .

This component measures ..... .

[2]

(b) She connects this electrical circuit.



Complete the sentences.

The circuit diagram shows a ..... circuit.

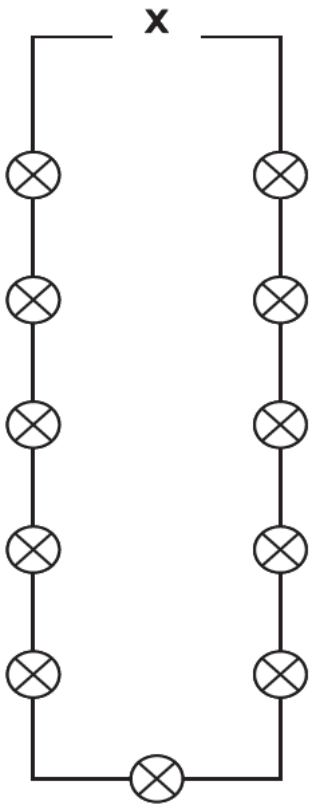
The component shown by (V) is ..... .

This component measures the ..... across the lamp.

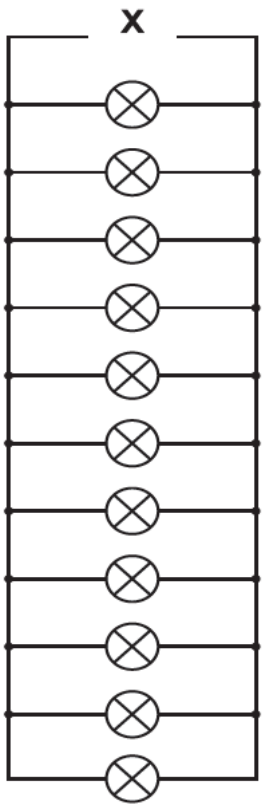
[2]

7. No.12

Blessy compares **two** electrical circuits.



circuit **A**



circuit **B**

(a) Which electrical component must be in position **X** to make the lamps work?

The name of this electrical component is .....

Draw the electrical circuit symbol for this component.

[2]

(b) All of the lamps are working in both circuits.

Blessy removes **one** lamp from circuit **A** and **one** lamp from circuit **B**.

Explain what happens to the **other** lamps in the circuits.

In circuit **A** the other lamps ..... .

This is because ..... .

In circuit **B** the other lamps ..... .

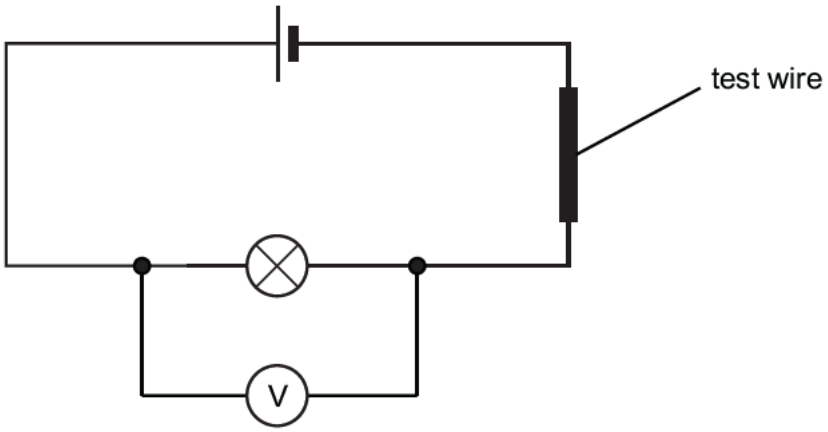
This is because ..... .

[2]

8. No.15

Safia investigates electrical circuits.

She measures the voltage across a lamp.

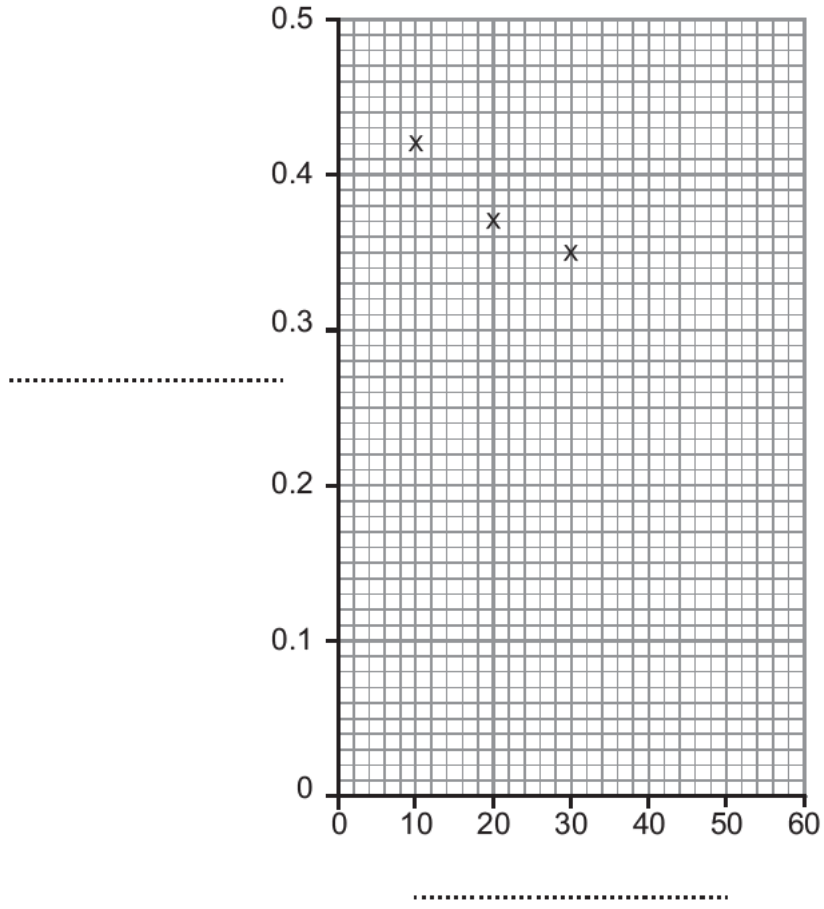


Safia writes her results in a table.

length of test wire in cm	voltage in V
10	0.42
20	0.37
30	0.35
40	0.28
50	0.22

(a) Complete the graph of Safia's results by

- adding labels to both of the axes
- plotting the points (the first three have been done for you).



[2]

(b) One of the results does not fit the pattern.

Which result is anomalous and what should Safia do to check this result?

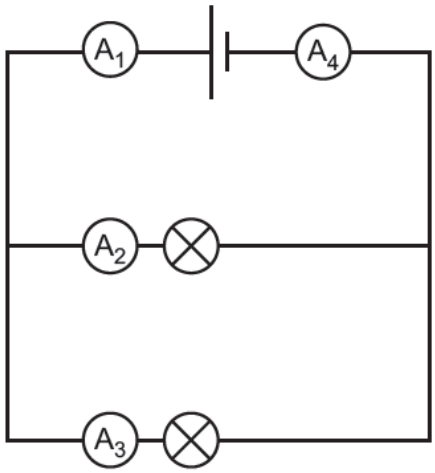
anomalous result .....

she should .....

[2]

9. No.3

Gabriella connects an electrical circuit.



There are two lamps and four ammeters in the circuit.

The lamps are identical.

The reading on $\mathbf{A_1}$ is 0.8 A.

What are the readings on the other ammeters?

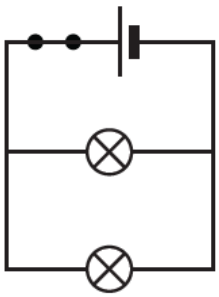
$\mathbf{A_2}$ is ..... A.

$\mathbf{A_3}$ is ..... A.

$\mathbf{A_4}$ is ..... A. [2]

10. No.16

Priya connects an electrical circuit.



(a) What type of circuit is shown in the diagram?

Circle the correct answer.

parallel circuit with closed switch

series circuit with closed switch

parallel circuit with open switch

parallel and series circuit with open switch

series circuit with open switch

[1]

(b) Priya wants to measure the current in the circuit.

What is the name of the meter she uses to measure the current?

..... [1]

11. No.12

Class 9 have a quiz about current and voltage.

Their teacher gives them four questions.

Answer the questions on the quiz.

Quiz

1. What equipment is used to measure current?

   .....

2. What equipment is used to measure voltage?

   .....

3. What is the unit of current?

   .....

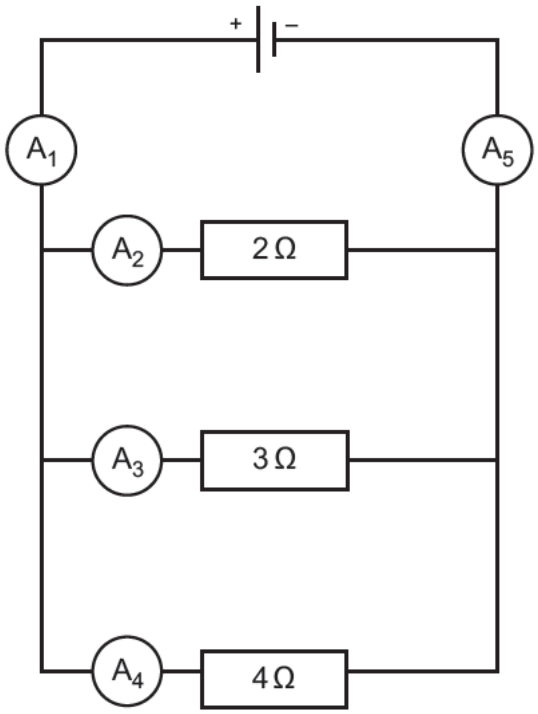
4. What is the unit of voltage?

   .....

[4]

12. No.16

Piriya connects an electrical circuit.



The 2Ω, 3Ω and 4Ω components are resistors.

Complete the readings on the ammeters.

A_1 = 1.8 amps

A_2 = 0.8 amps

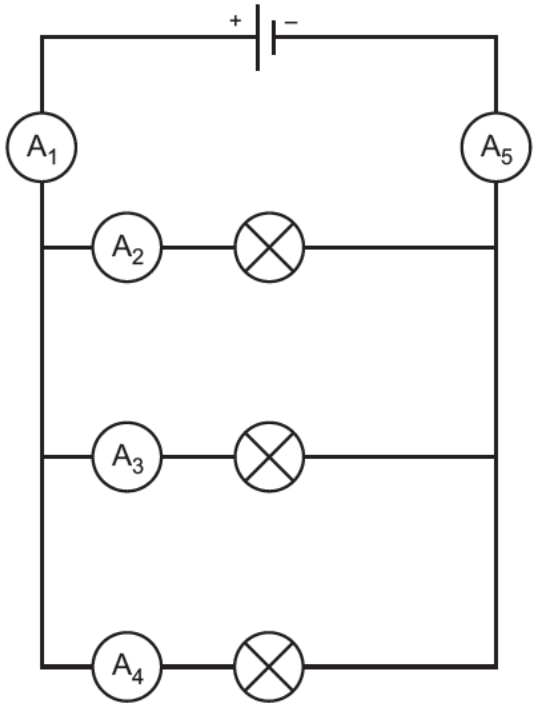
A_3 = 0.6 amps

A_4 ..... amps

A_5 ..... amps [2]

13. No.4

Mia connects an electrical circuit.



(a) What type of electrical circuit has Mia made?

..... [1]

(b) There are five components in the circuit with the letter **A** in a circle.

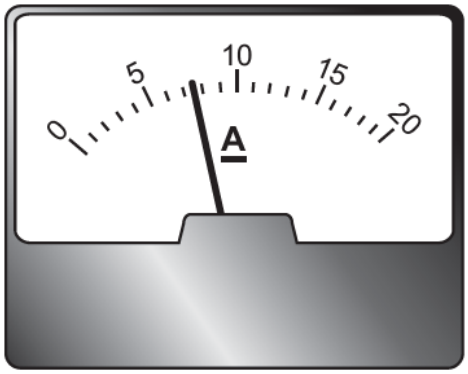
(i) Write down the name of this component.

..... [1]

(ii) What do these components measure?

..... [1]

(c) Here is a picture of component $\mathbf{A_1}$.



What is the reading on component $\mathbf{A_1}$?

..... [1]

(d) Predict the reading on component $\mathbf{A_5}$.

..... [1]