

P2 Quick Revision Questions

Question 1 of 50

- How can an insulator become charged?

Answer 1

.... of 50

- Electrons being transferred from one material to another by friction.

Question 2

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Fill the gap

- Like charges _____
- Unlike charges _____

Answer 2

.... of 50

- Repel
- Attract

Question 3

.... of 50

- When electrons are transferred to a material, what charge will it then have?

Answer 3

.... of 50

- Negative.

Question 4

.... of 50

- What is an electric field?

Answer 4

.... of 50

- A region where a force acts on a charged particle.

Question 5

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- How does the strength of an electric field change as you move further away from a charge?

Answer 5

.... of 50

- It decreases

Question 6

.... of 50

- How do electric fields lead to electrostatic sparking?

Answer 6

.... of 50

- In a very strong electric field, atoms and molecules break apart form ions.
- The charged ions experience a force due to the electric field.
- This creates a spark

Question 7

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- What is the definition of electric current?

Answer 7

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- The rate of flow of electric charge.

Question 8

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- What is the definition of potential difference?

Answer 8

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- The energy transferred per unit charge.

Question 9

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- What causes resistance in an electric circuit?

Answer 9

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- The electrons flowing through the circuit collide with metal ions in the wires and components.

Question 10

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- What happens to the wires and components in a circuit when current flows through them?

Answer 10

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- They heat up due to the electrons colliding with the metal ions.

Question 11

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- How can you work out the potential difference if you know the current and resistance?

Answer 11

.... of 50

- Ohm's Law

Question 12

.... of 50

- What is Ohm's Law?

Answer 12

.... of 50

- $V = IR$

Question 13

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- What is the difference between series and parallel circuits?

Answer 13

.... of 50

- Series circuits have a **single** loop.
- Parallel circuits have more than one loop.

Question 14

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- Will 2 bulbs be brighter if they are placed in series or in parallel?

Answer 14

.... of 50

- Parallel.

Question 15

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- How do you measure the current in a circuit?

Answer 15

.... of 50

- Add an ammeter to the circuit **in series**.

Question 16

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- How do you measure the potential difference of a component in a circuit?

Answer 16

.... of 50

- Add a voltmeter **in parallel** with the component.

Question 17

.... of 50

- How do you work out the resistance in a circuit?

Answer 17

.... of 50

- Measure the potential difference – in parallel
- Measure the current – in series
- Rearrange $V = I R$
- $R = V / I$
- Divide potential difference by current.
- Answer in Ohms (Ω)

Question 18

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- What is the relationship between potential difference and current in a resistor?

Answer 18

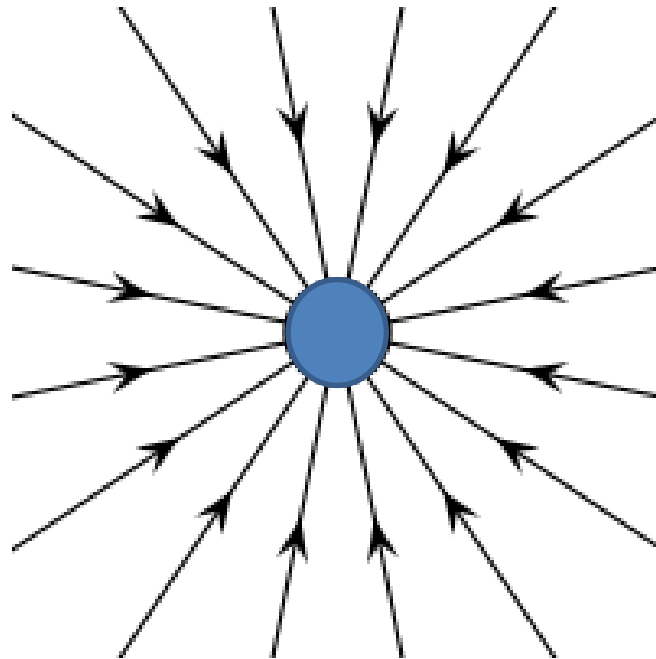
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- They are directly proportional

Question 19

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- Is this a positive or a negative charge?



Answer 19

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- Negative

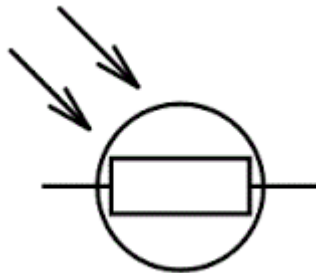
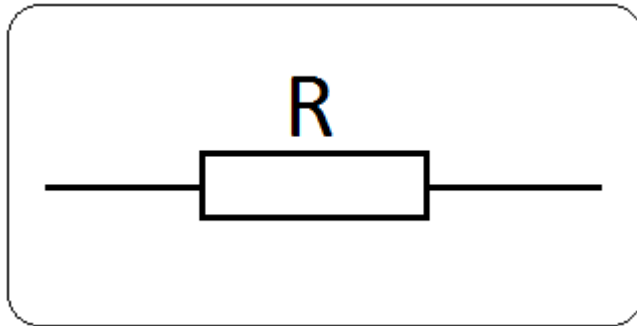
Question 20

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- Draw the symbols of a lamp, a resistor and an LDR

Answer 20

.... of 50



Question 21

.... of 50

- Calculate the current when 100 C of charge flows in 1 minute.

Answer 21

.... of 50

- $I = \frac{Q}{t} = \frac{100}{60} = 1.7 \text{ A}$

Question 22

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- Calculate the potential difference across a $3\ \Omega$ resistor, when the current is 6A

Answer 22

.... of 50

- $V = IR = 3 \times 6 = 18 V$

Question 23

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- Are the electrical appliances in a home connected in series or in parallel?

Answer 23

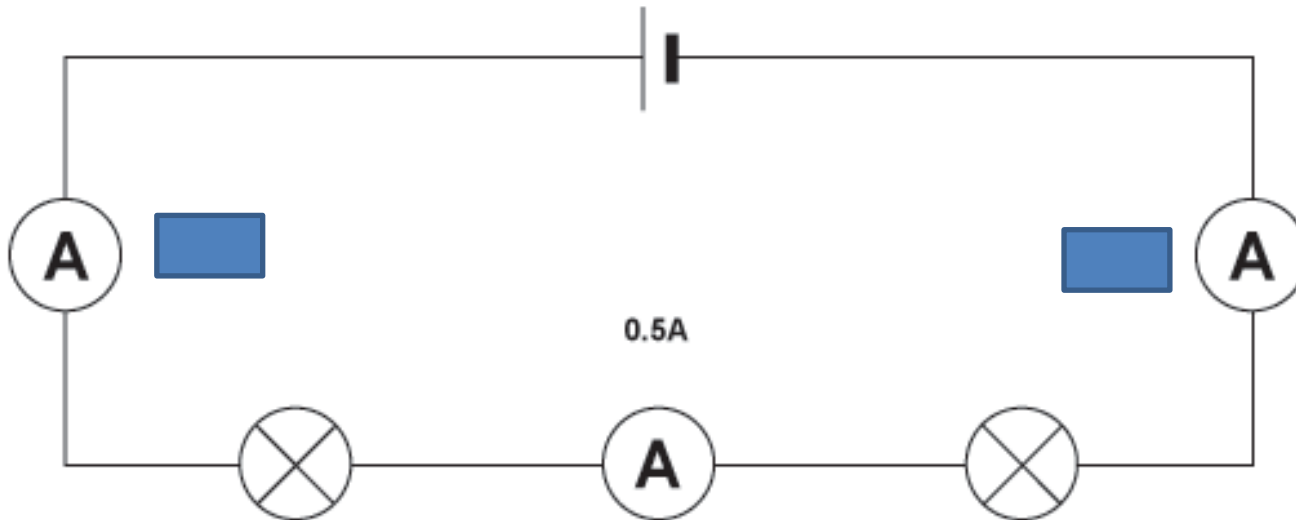
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- Parallel

Question 24

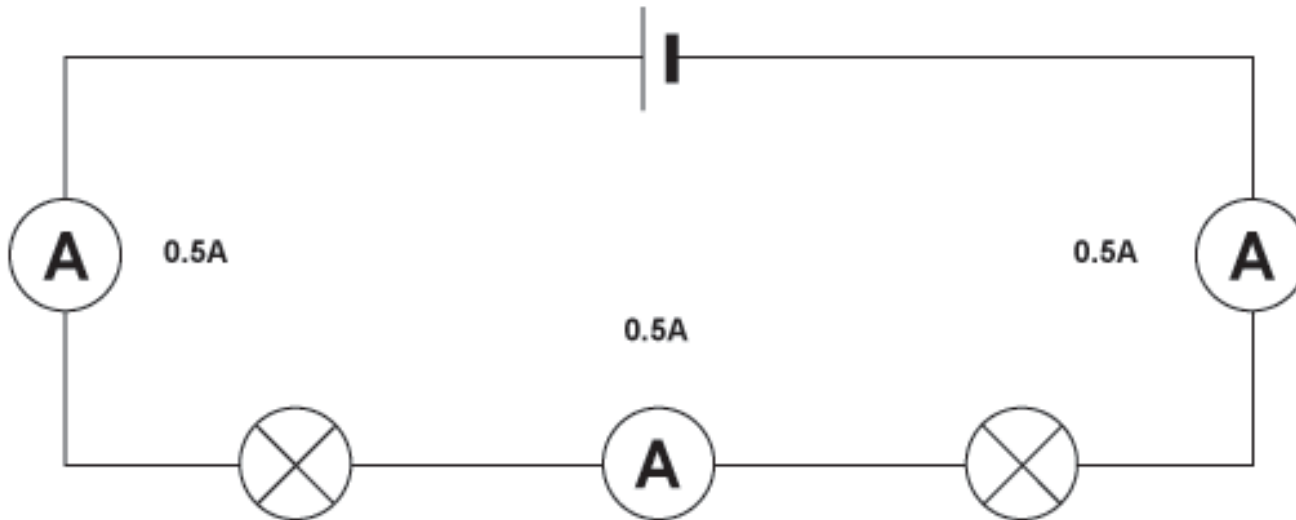
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What are the reading on the ammeters?



Answer 24

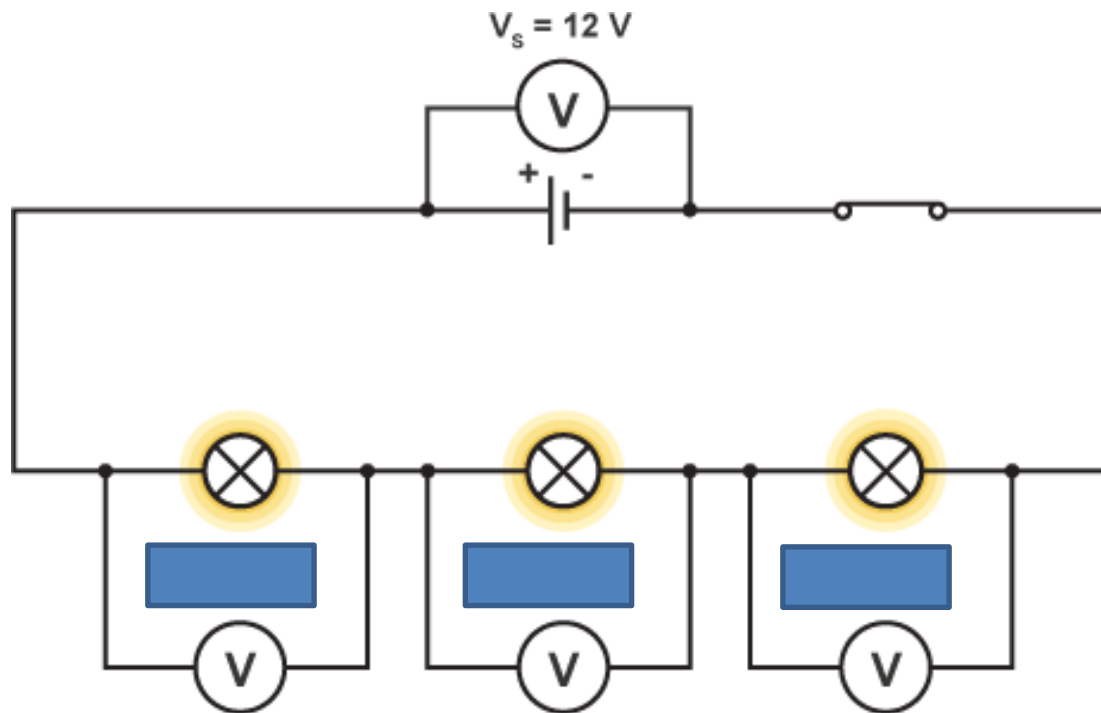
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Question 25

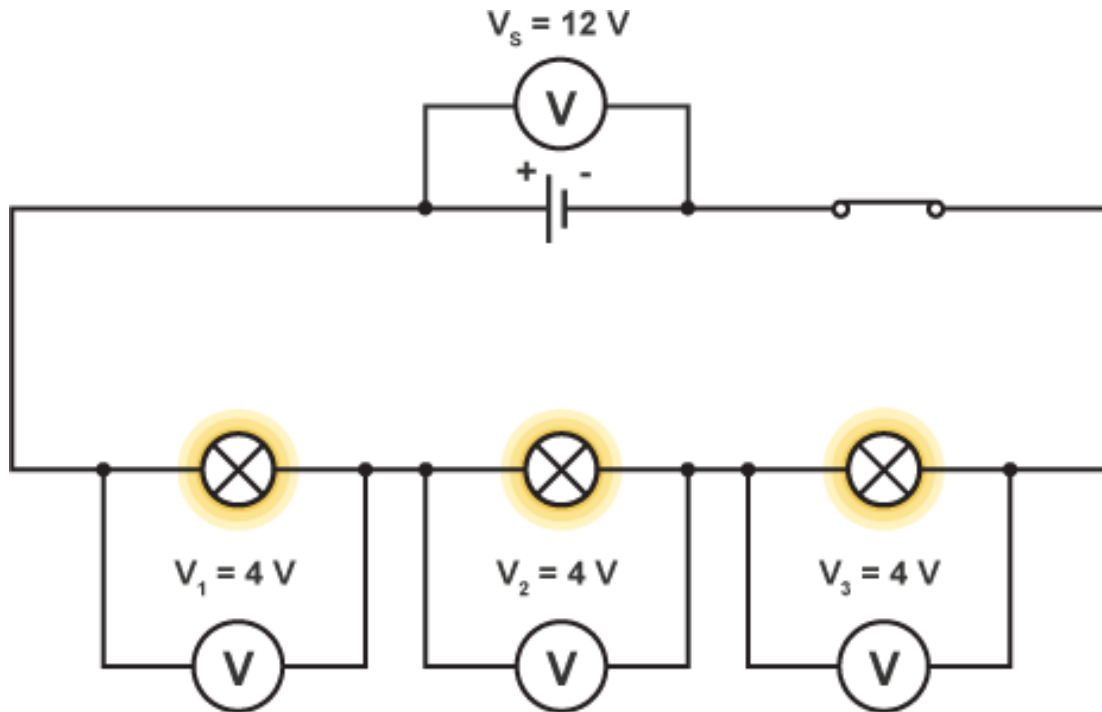
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- If all 3 lamps are identical, what are the readings on the voltmeters?



Answer 25

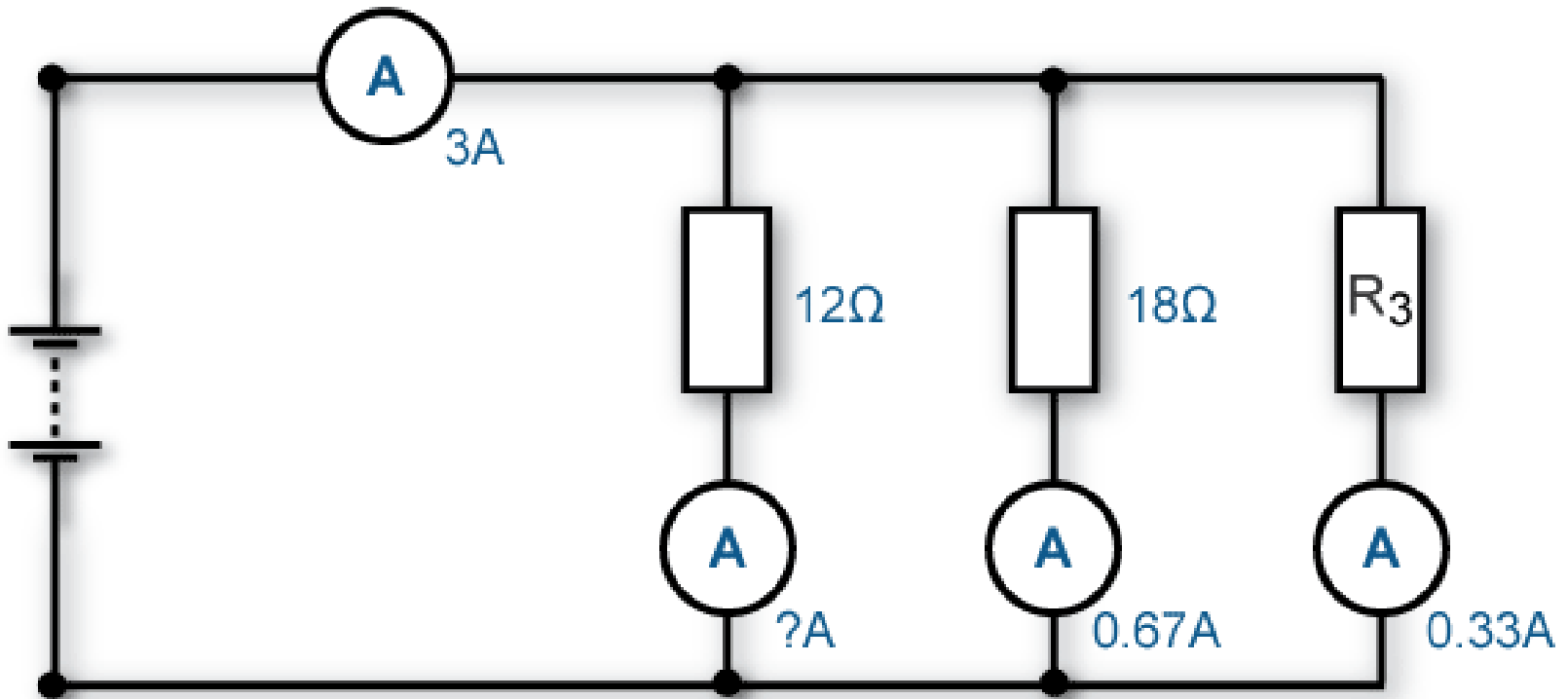
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Question 26

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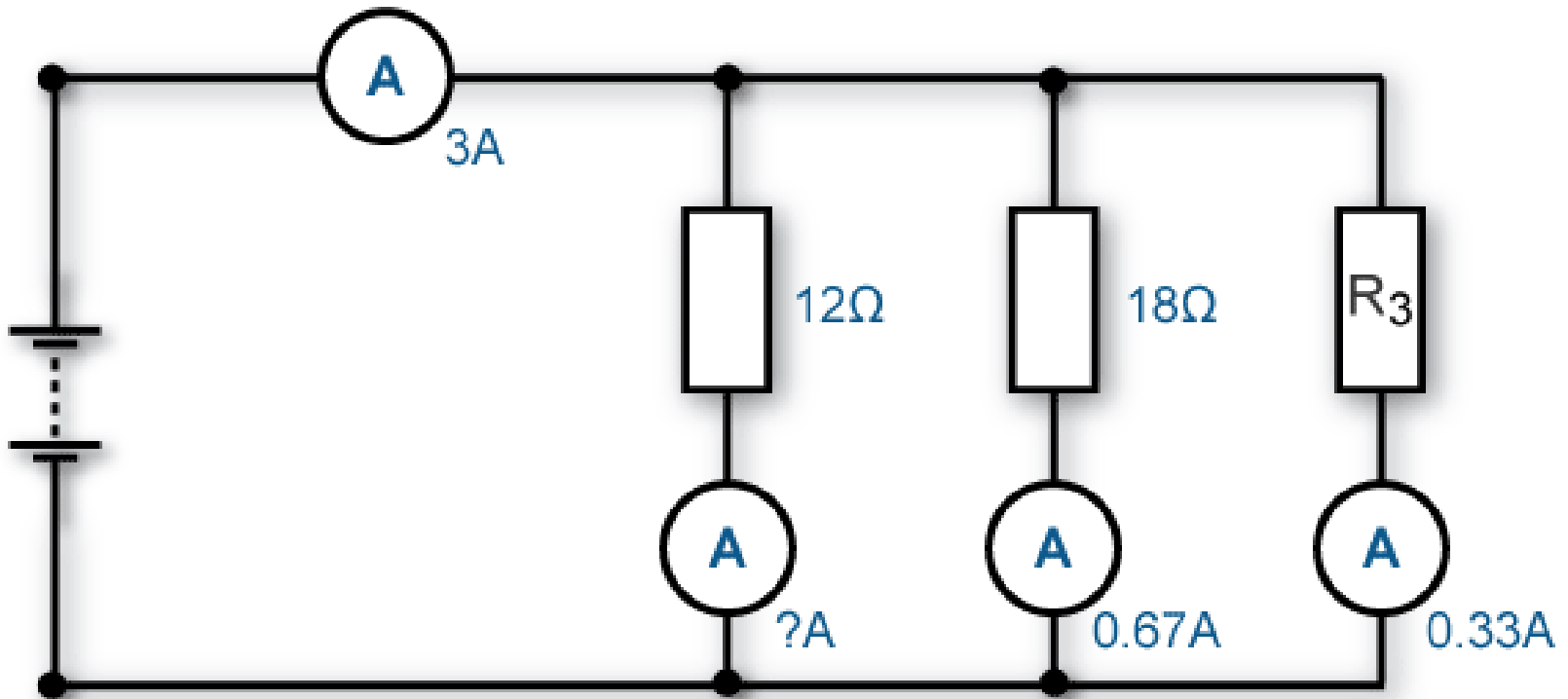
- What is the reading on the ammeter?



Answer 26

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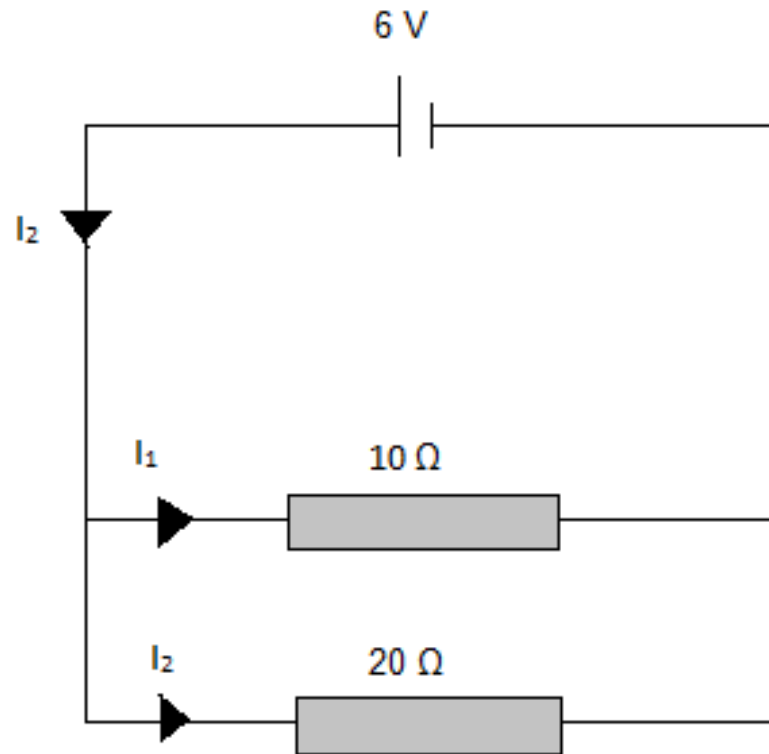
- 2A



Question 27

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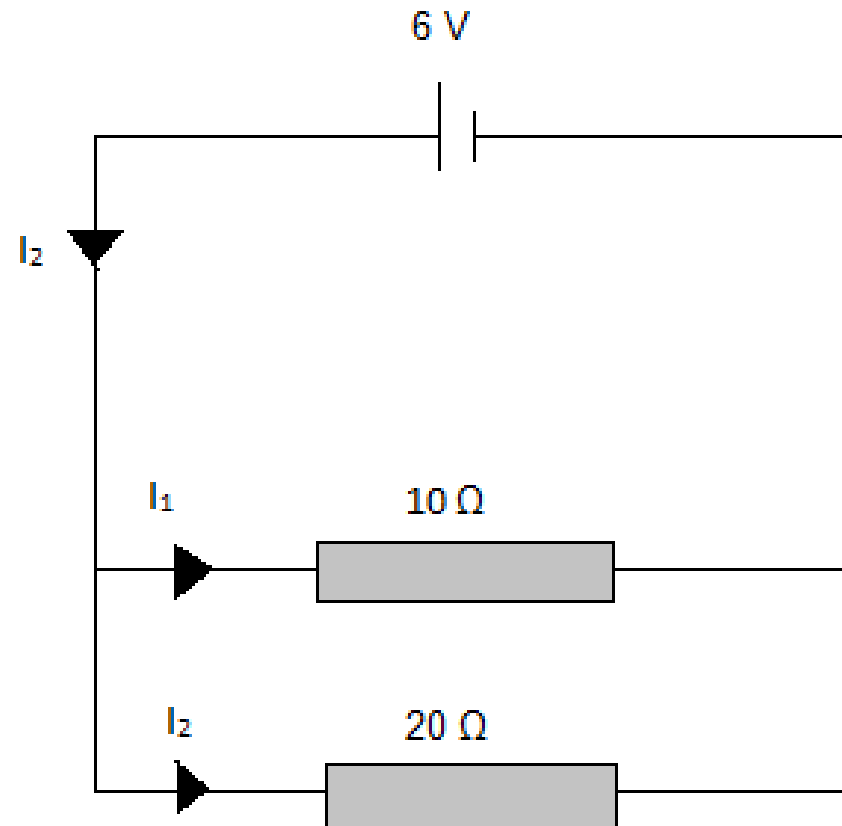
- What's the potential difference across the two resistors?



Answer 27

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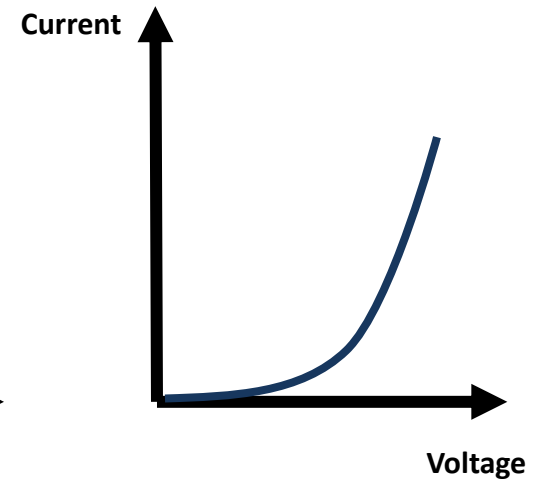
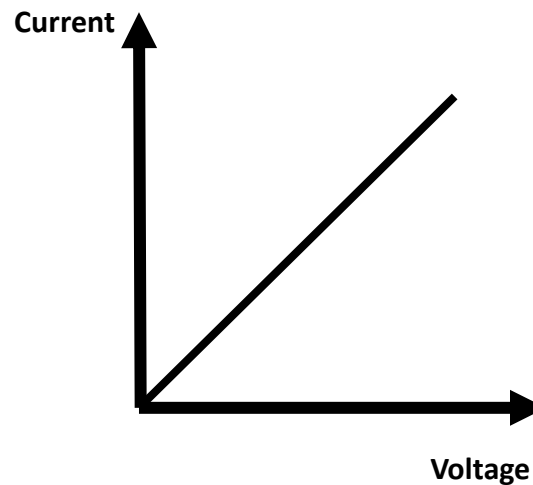
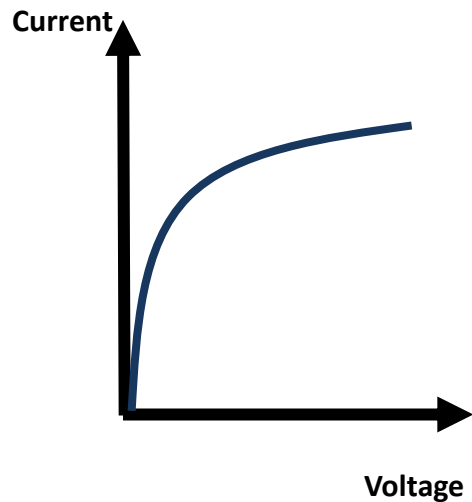
- 6 V



Question 28

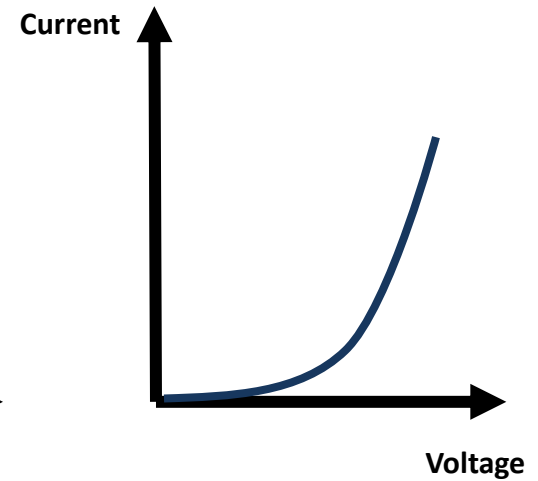
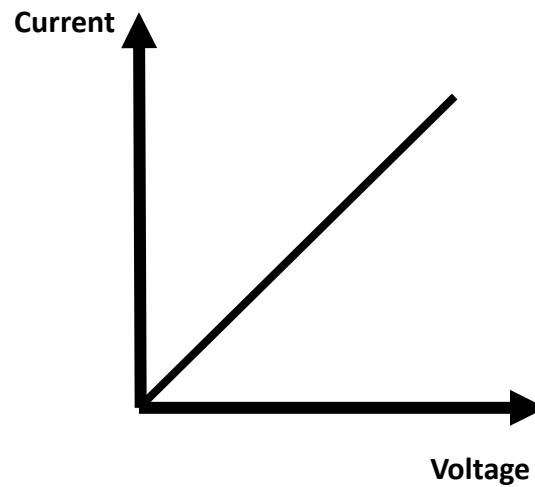
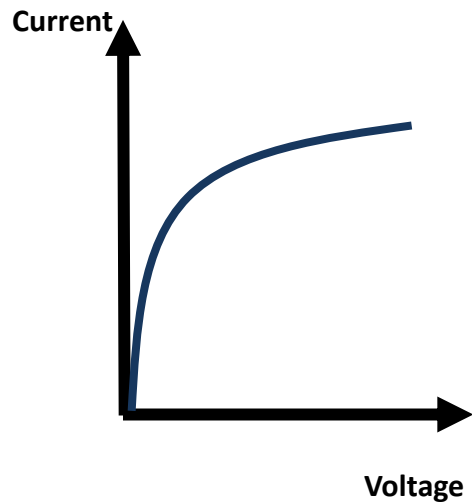
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- Which of these components obeys Ohm's Law?



Answer 28

.... of 50



Question 29

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- What does a straight line graph through the origin tell you about the quantities plotted?

Answer 29

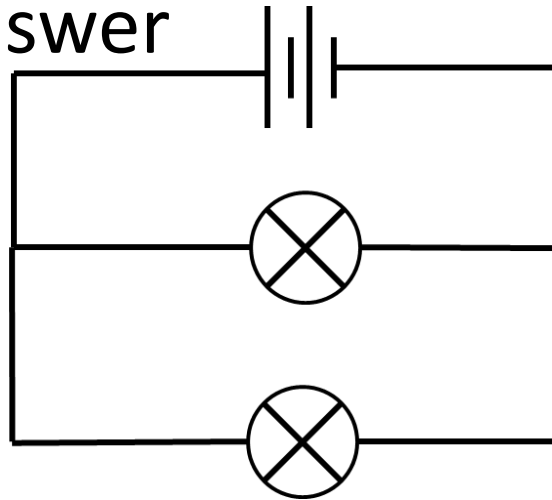
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- They are directly proportional

Question 30

.... of 50

- Pick the right answer



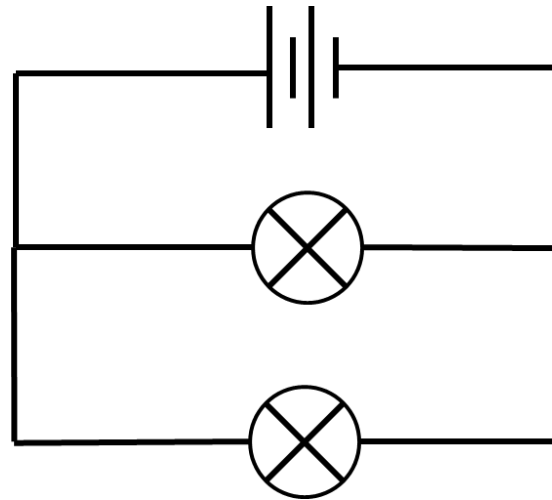
Potential difference is always the same across each lamp.

Potential difference is shared out between the lamps.

Potential difference is smaller for the second lamp.

Answer 30

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Potential difference is always the same across each lamp.

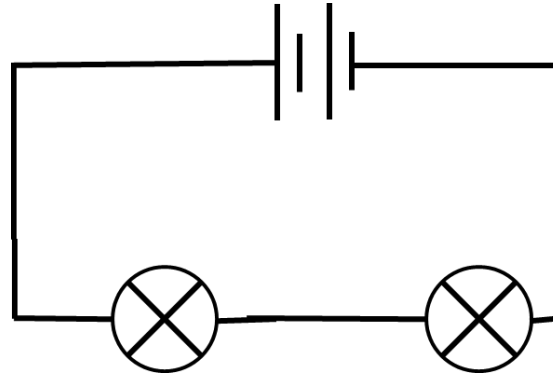
Potential difference is shared out between the lamps.

Potential difference is smaller for the second lamp.

Question 31

.... of 50

- Pick the right answer



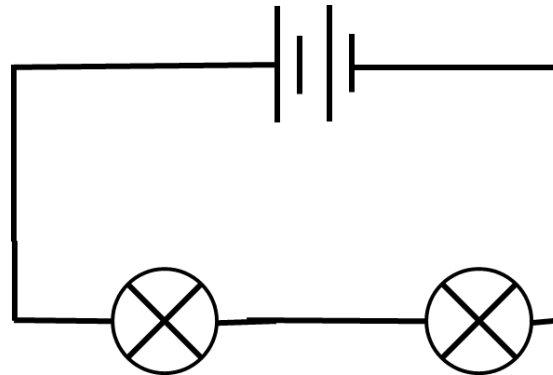
Current is the same at all points in the circuit.

Current splits up at junctions so less returns to the cells.

Current splits / joins up at each junction none is lost.

Answer 31

.... of 50



**Current is
the same at
all points in
the circuit.**

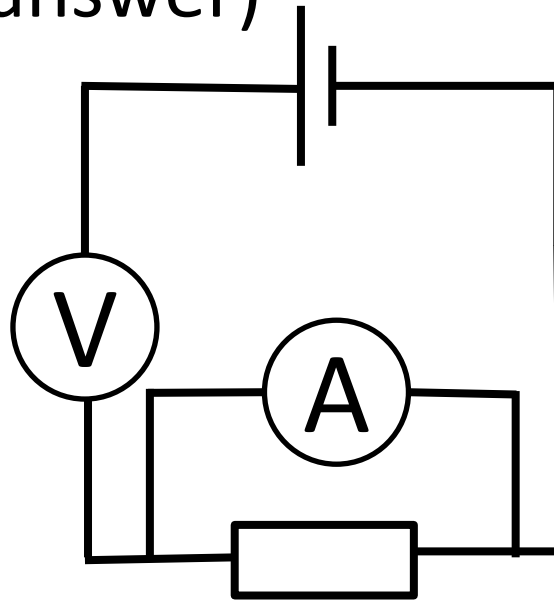
**Current
splits up at
junctions
so less
returns to
the cells.**

**Current splits
/ joins up at
each junction
none is lost.**

Question 32

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- Can you use this circuit to find resistance?
(Explain your answer)

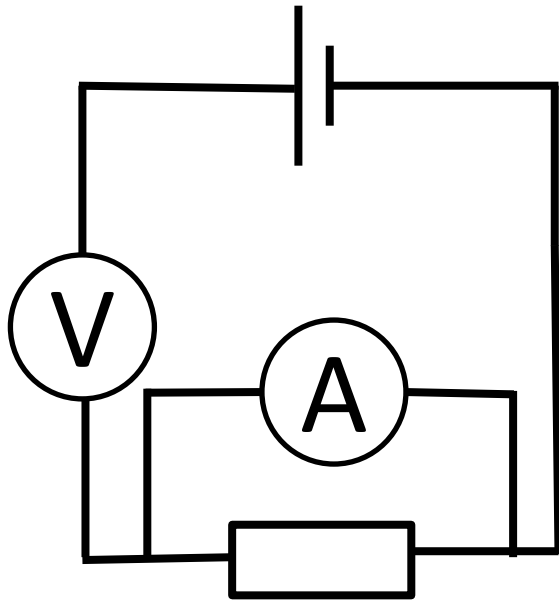


Answer 32

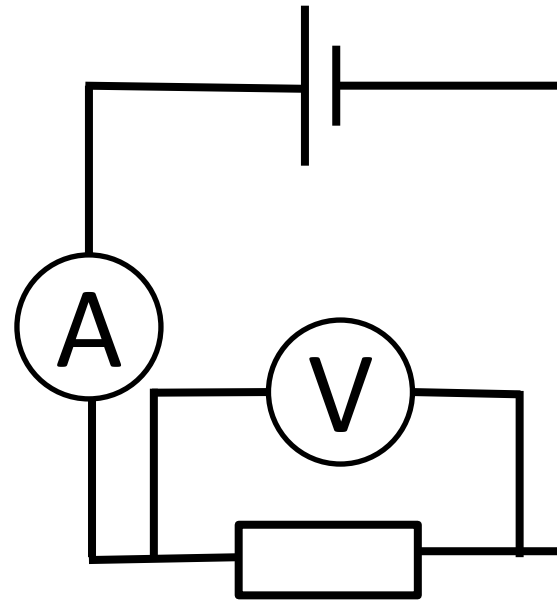
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- No.

Wrong



Right



Question 33

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- Calculate the total resistance



Answer 33

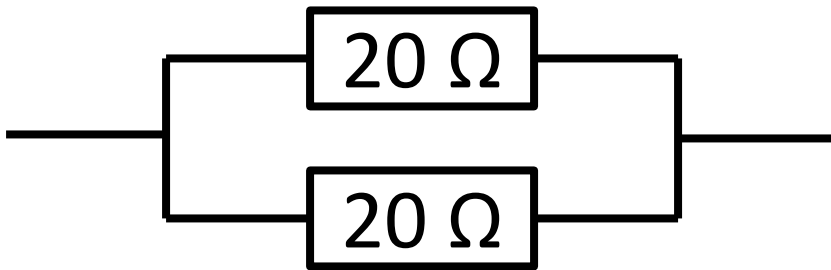
.... of 50

- 40 Ω

Question 34

.... of 50

- Calculate the total resistance



Answer 34

.... of 50

- 10 Ω

Question 35

.... of 50

- Which of these pieces of wire will have the most resistance?
 - Long and thick
 - Short and thick
 - Long and thin
 - Short and thin
 - Medium length and medium thickness

Answer 35

.... of 50

- Long and thin

Question 36

.... of 50

- Potential Difference is the:
 - rate of flow of electric charge around a circuit
 - amount energy transferred by a unit of charge
 - measure of how difficult it is for electric current to flow
 - heat given out by a component
 - amount of energy transferred each second

Answer 36

.... of 50

- amount energy transferred by a unit of charge

Question 37

.... of 50

Current is the:

- rate of flow of electric charge around a circuit
- amount energy transferred by a unit of charge
- measure of how difficult it is for electric current to flow
- heat given out by a component
- amount of energy transferred each second

Answer 37

.... of 50

- rate of flow of electric charge around a circuit

Question 38

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Resistance is the:

- rate of flow of electric charge around a circuit
- amount energy transferred by a unit of charge
- measure of how difficult it is for electric current to flow
- heat given out by a component
- amount of energy transferred each second

Answer 20

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- measure of how difficult it is for electric current to flow

Question 39

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Maureen has 3 lamps. She is trying to work out which one has the most resistance – so she sets up a circuit and takes some readings: Which one has the most resistance?

- A – 10 volts and 6 Amps
- B – 20 volts and 8 Amps
- C – 20 volts and 4 Amps

Answer 39

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- A – 10 volts and 6 Amps $R=10/6=1.7 \Omega$
- B – 20 volts and 8 Amps $R=20/8=2.5 \Omega$
- C – 20 volts and 4 Amps $R=20/4=5 \Omega$

Question 40

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- When a kettle is connected to the 240v mains a current of 10 Amps flows. What is its resistance?

Answer 40

.... of 50

- $R=V/I=240/10=2.4 \Omega$

Question 41

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- If a resistor of 250 Ohms is connected to a 50v power-pack how much current will flow?

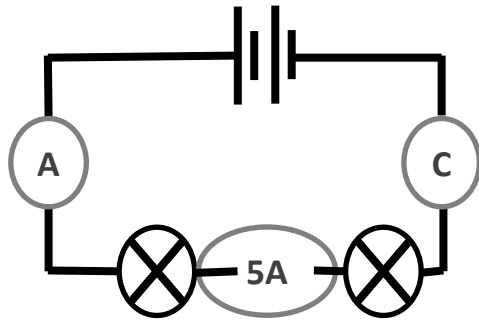
Answer 41

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- $I = V/R = 50/250 = 0.2 \text{ A}$

Question 42

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A= _____

C= _____

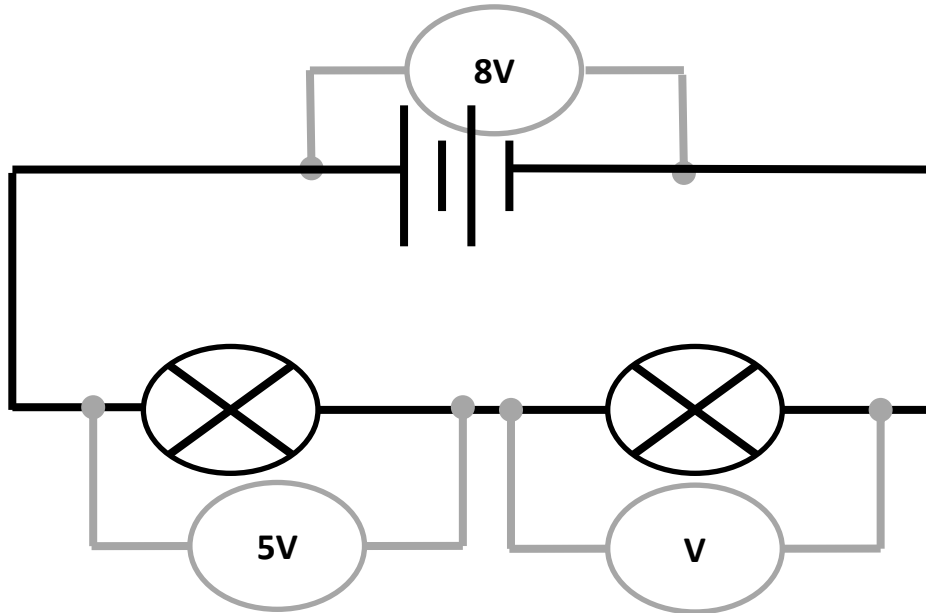
Answer 42

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- $A=5A$ $C=5A$

Question 43

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$V =$ _____

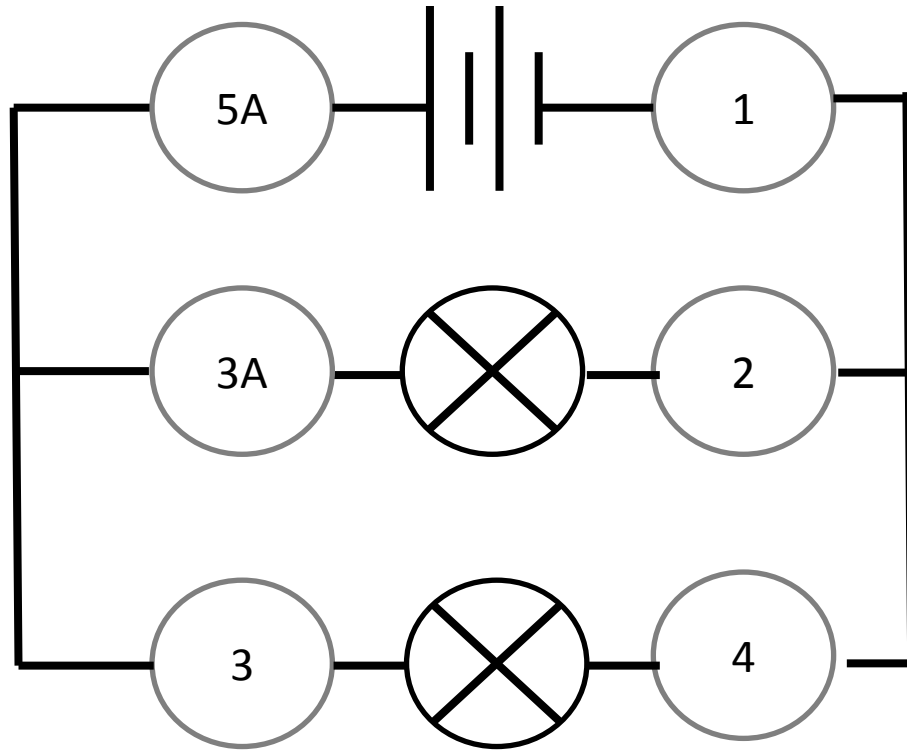
Answer 20

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- 3V

Question 44

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1= _____

2= _____

3= _____

4= _____

Answer 44

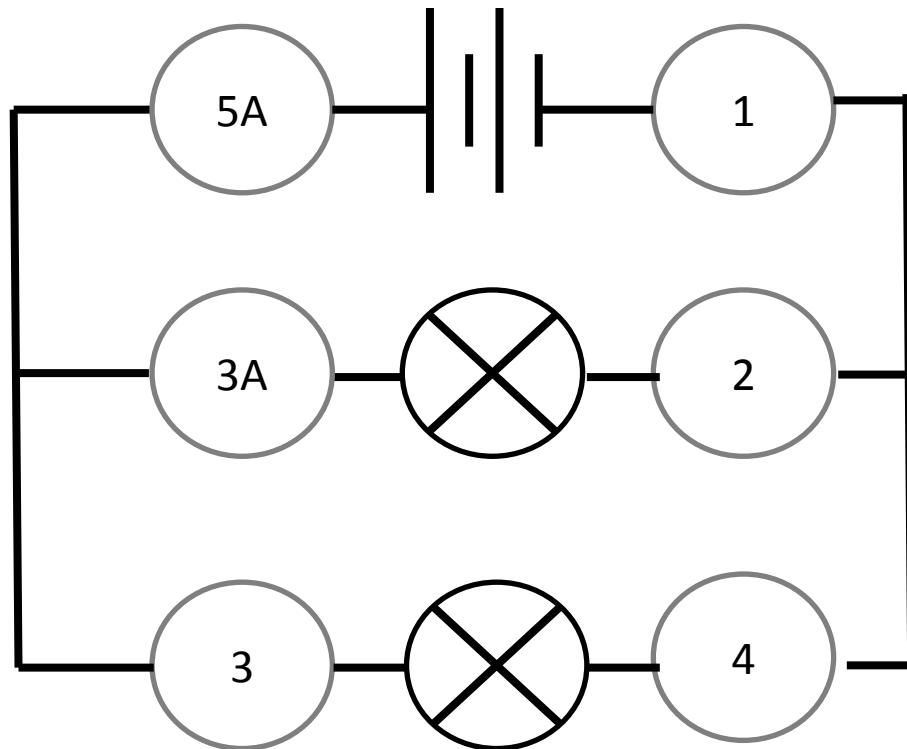
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$$1=5A$$

$$2=3A$$

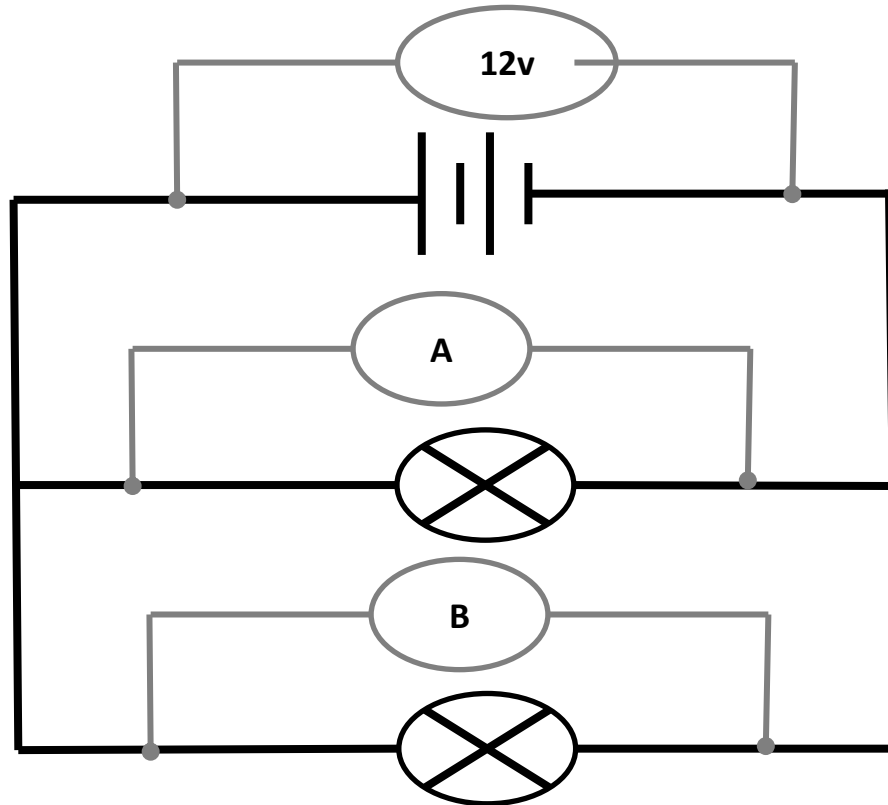
$$3=2A$$

$$4=2A$$



Question 45

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A= _____ B= _____

Answer 45

.... of 50

A=12V B=12V

Question 46

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- Power stations produce electricity at 25,000V. Before it goes onto the grid we use a step-up transformer to...
 - **Increase the voltage and reduce the current**
 - **Increase the current and reduce the voltage**
 - **Increase the current and increase the voltage**

Answer 46

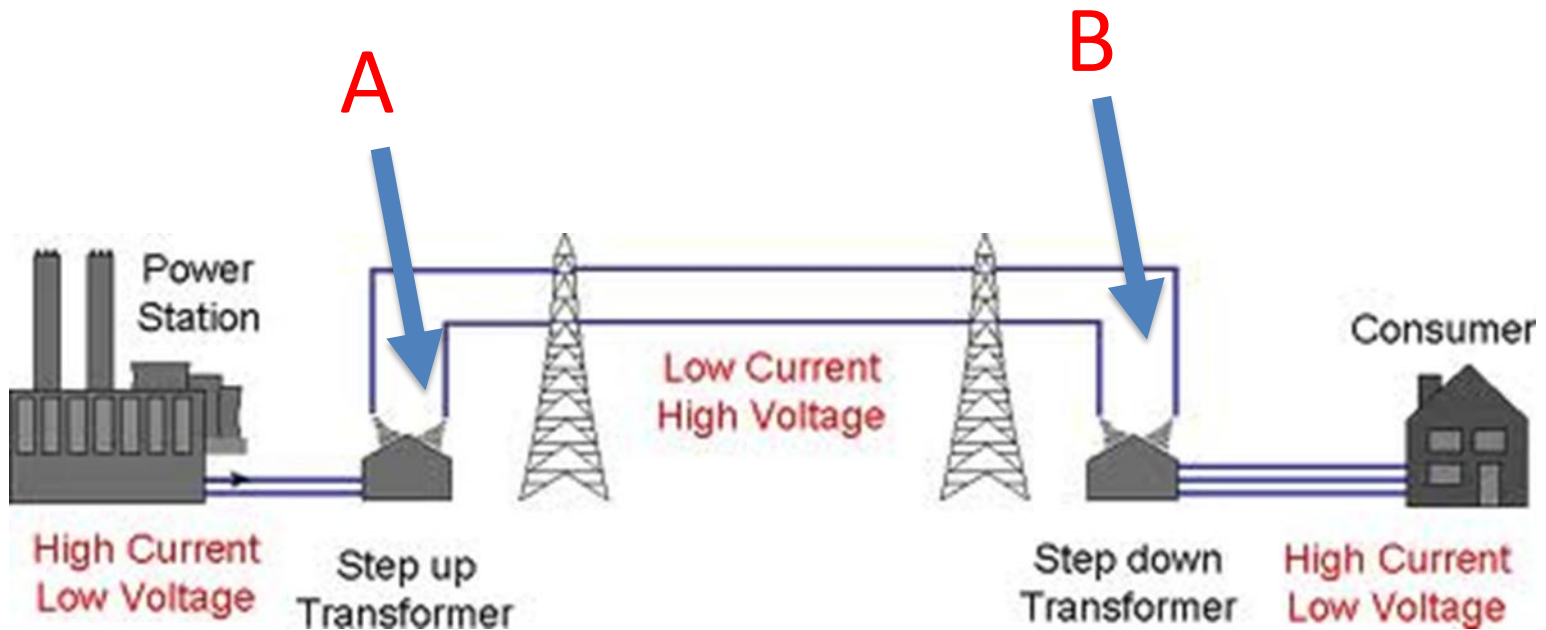
.... of 50

- **Increase the voltage and reduce the current**

Question 47

.... of 50

- Which one is a step up transformer?



Answer 47

.... of 50

A

Question 48

.... of 50

- Complete the missing words:

A fuse is a thin piece of w_____ that m_____ easily

The correct fuse will stop a cable overheating
and starting a f_____

Answer 48

.... of 50

A fuse is a thin piece of wire that melts easily
The correct fuse will stop a cable overheating
and starting a fire

Question 49

.... of 50

- A snack pot needs 40000J of energy to heat it. If the power of a microwave is 800W how long will it take?

Answer 49

.... of 50

- $t = E/P = 40000/800 = 50 \text{ s}$

Question 50

.... of 50

- 20 Coulombs of charge pass through a lamp with a potential difference of 12Volts across it. How much energy is being transferred?

Answer 50

.... of 50

- $E=Q \times V=20 \times 12=240 \text{ J}$