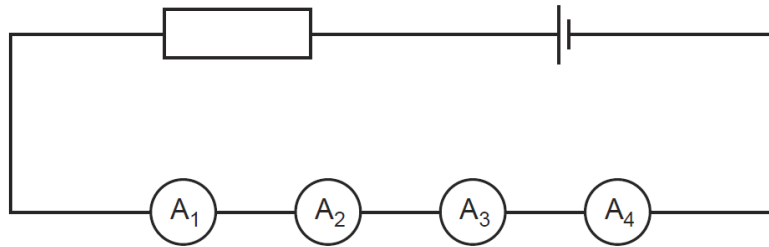


## SERIES-PARALLEL CIRCUIT-SET-1

1

Two faulty ammeters and two perfect ammeters are connected in series in the circuit shown.



The readings on the ammeters are

$$A_1 \quad 2.9 \text{ A}$$

$$A_2 \quad 3.1 \text{ A}$$

$$A_3 \quad 3.1 \text{ A}$$

$$A_4 \quad 3.3 \text{ A}$$

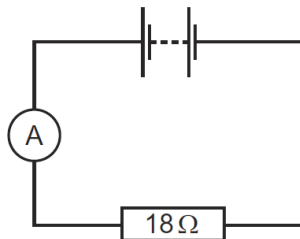
Which two ammeters are faulty?

- A**  $A_1$  and  $A_2$       **B**  $A_1$  and  $A_4$       **C**  $A_2$  and  $A_3$       **D**  $A_3$  and  $A_4$

MS-1

2

An ammeter and an  $18 \Omega$  resistor are connected in series with a battery. The reading on the ammeter is  $0.50 \text{ A}$ . The resistance of the battery and the ammeter can be ignored.



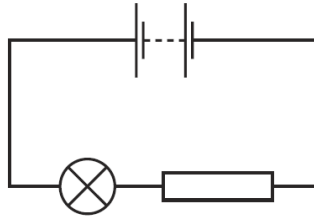
What is the electromotive force (e.m.f.) of the battery?

- A**  $9.0 \text{ N}$       **B**  $9.0 \text{ V}$       **C**  $36 \text{ N}$       **D**  $36 \text{ V}$

MS-2

3

The diagram shows a lamp and a resistor connected in a circuit. The lamp is too bright.

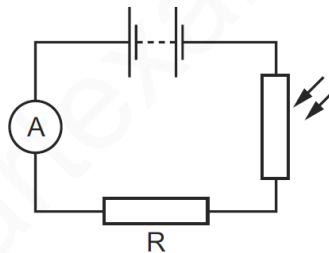


Which change to the circuit will decrease the current in the lamp and make it less bright?

- A** connecting another resistor in parallel with the one in the circuit
- B** connecting another resistor in series with the one in the circuit
- C** exchanging the positions of the lamp and the resistor in the circuit
- D** increasing the e.m.f. of the battery in the circuit

4

A light-dependent resistor (LDR) and a resistor R are connected in a series circuit. Light falls on the LDR.



The brightness of the light falling on the LDR decreases.

What happens to the resistance of the LDR and what happens to the reading on the ammeter?

|          | resistance of LDR | reading on ammeter |
|----------|-------------------|--------------------|
| <b>A</b> | decreases         | decreases          |
| <b>B</b> | decreases         | increases          |
| <b>C</b> | increases         | decreases          |
| <b>D</b> | increases         | increases          |

5

A  $3.0\ \Omega$  lamp and a  $6.0\ \Omega$  lamp are connected in series.

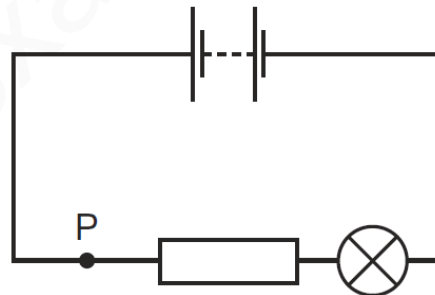
What is the total resistance of the combination?

- A**  $0.5\ \Omega$
- B**  $2.0\ \Omega$
- C**  $9.0\ \Omega$
- D**  $18.0\ \Omega$

MS-5

6

The diagram shows a lamp in a circuit.



Which change to the circuit would increase the current in the lamp?

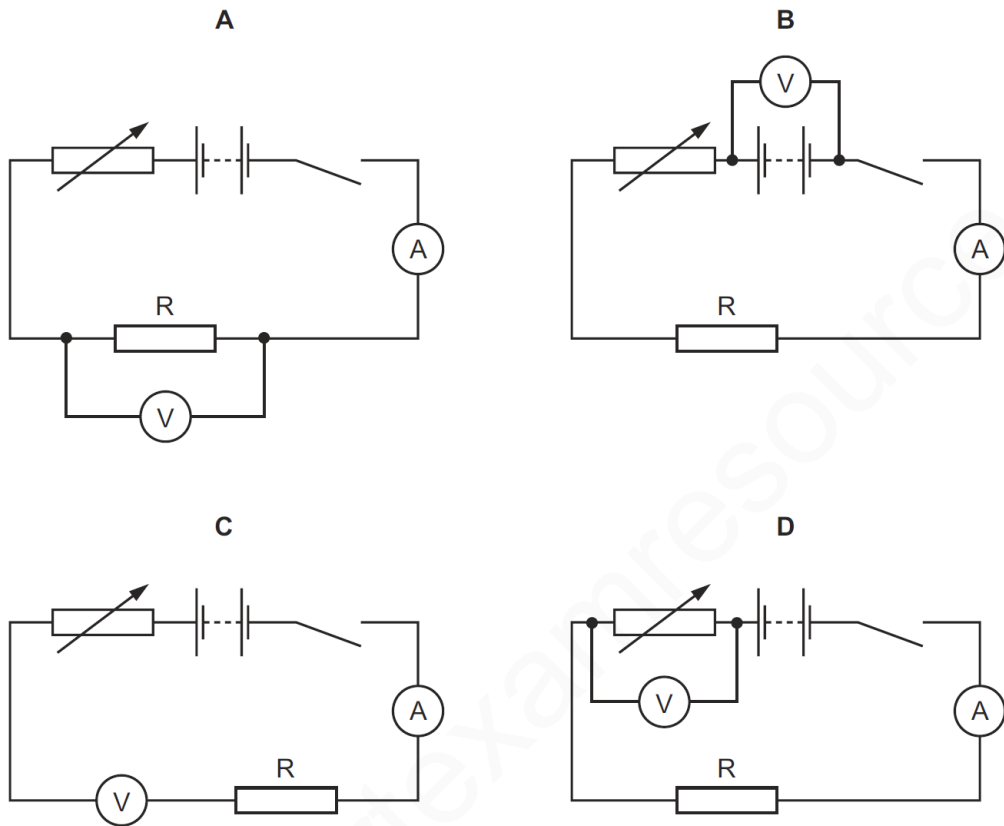
- A** adding another resistor in parallel with the one in the circuit
- B** adding another resistor in series with the one in the circuit
- C** decreasing the electromotive force (e.m.f.) of the battery in the circuit
- D** moving the lamp to point P in the circuit

MS-6

7

A student carries out an experiment to investigate the resistance of a resistor  $R$ . She takes a series of readings of potential difference (p.d.) and current, and plots a graph of her results.

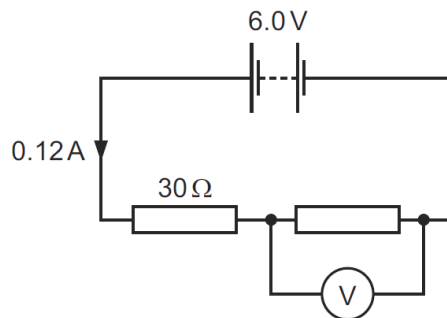
Which circuit should she use?



MS-7

8

A  $30\ \Omega$  resistor is connected in series with another resistor and a  $6.0\text{V}$  battery. The current in the circuit is  $0.12\text{A}$ . A voltmeter is connected across the other resistor.



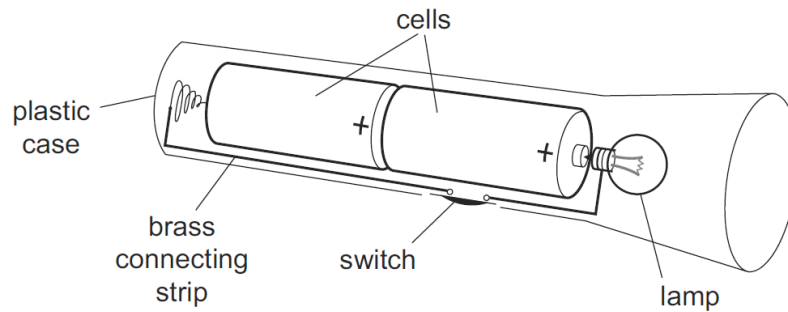
What is the reading on the voltmeter?

- A**  $2.4\text{V}$       **B**  $3.6\text{V}$       **C**  $6.0\text{V}$       **D**  $9.6\text{V}$

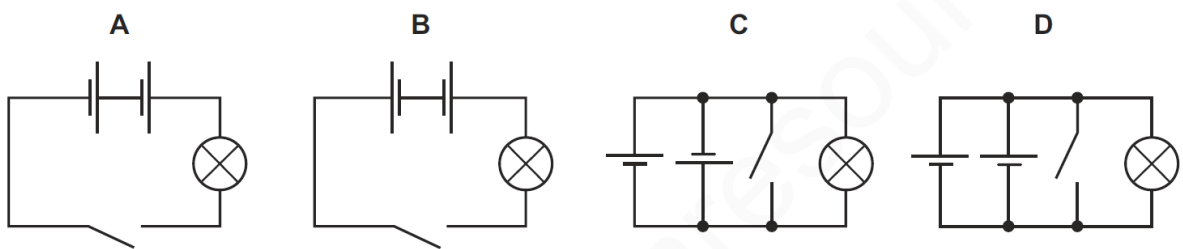
MS-8

9

The diagram shows a torch containing two cells, a switch and a lamp.



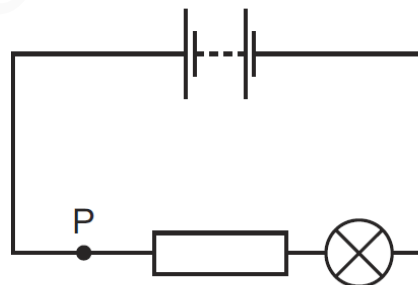
Which is the circuit diagram for the torch?



MS-9

10

The diagram shows a lamp in a circuit.



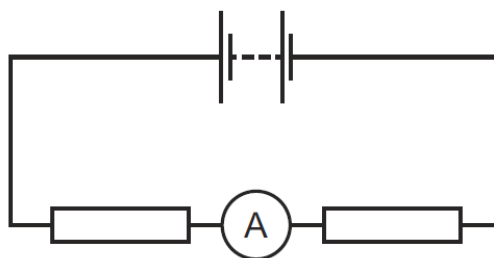
Which change to the circuit would increase the current in the lamp?

- A** adding another resistor in parallel with the one in the circuit
- B** adding another resistor in series with the one in the circuit
- C** decreasing the electromotive force (e.m.f.) of the battery in the circuit
- D** moving the lamp to point P in the circuit

MS-10

11

The diagram shows a circuit.



The reading on the ammeter is 12 A.

How much charge passes through the ammeter in 2.0 minutes?

- A** 0.10 C                      **B** 6.0 C                      **C** 24 C                      **D** 1440 C

MS-11