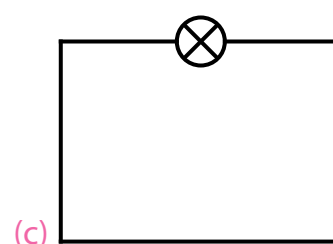
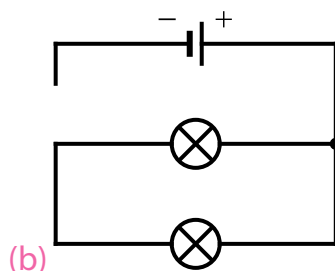
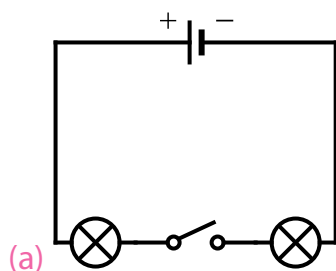
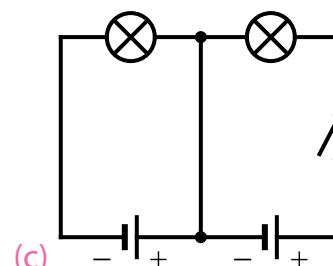
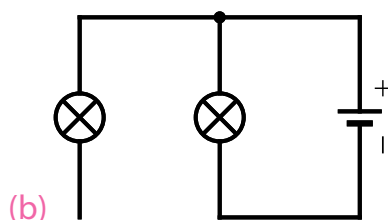
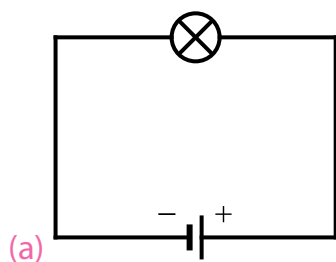


- 1 Which of these four situations are open circuits and which are closed circuits?
- (a) The kettle is off.
- (b) The power button on the remote control is being pressed.
- (c) A remote controlled plane that is flying.
- (d) A washing machine that is turned off.

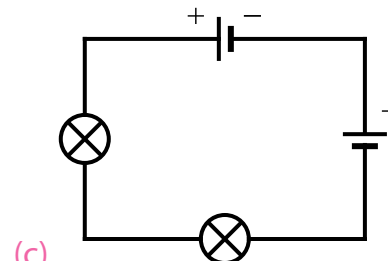
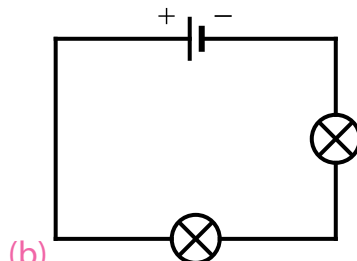
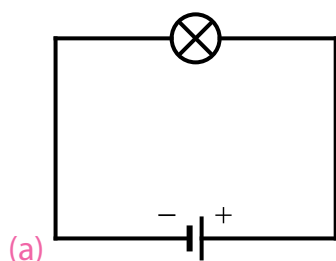
- 2 Which of these circuits are open and which are closed?



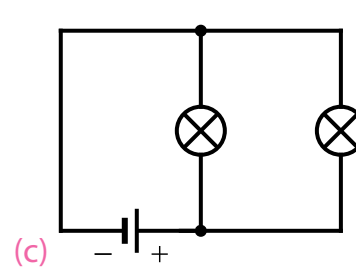
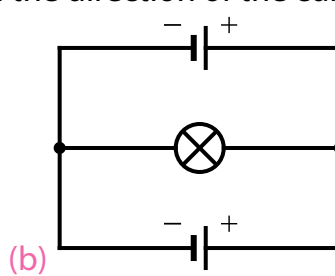
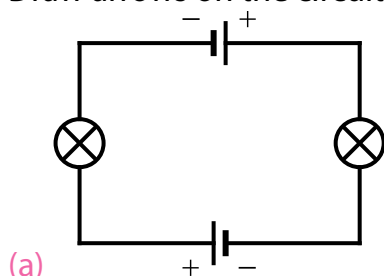
- 3 Draw around the closed loop in these circuits.



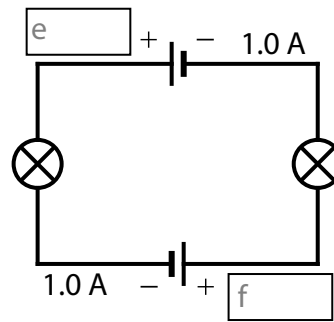
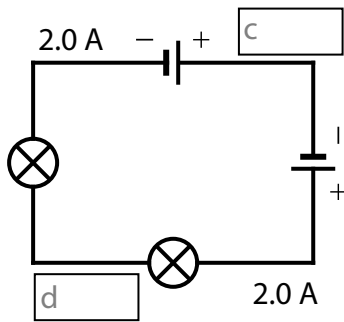
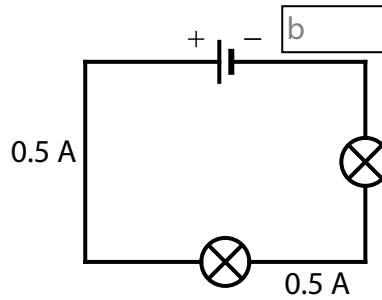
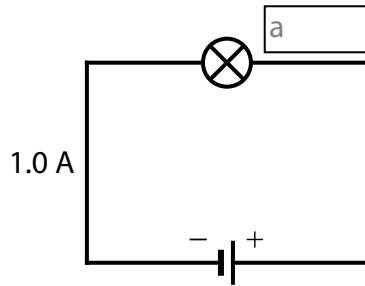
- 4 Draw arrows on the circuits in the direction of the current.



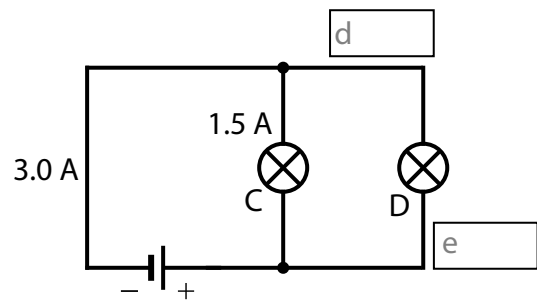
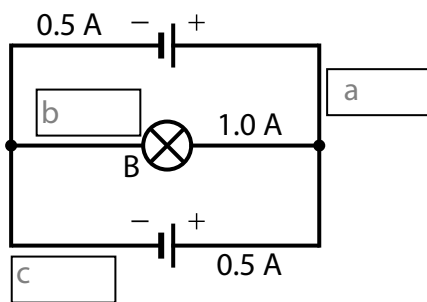
- 5 Draw arrows on the circuits in the direction of the current.



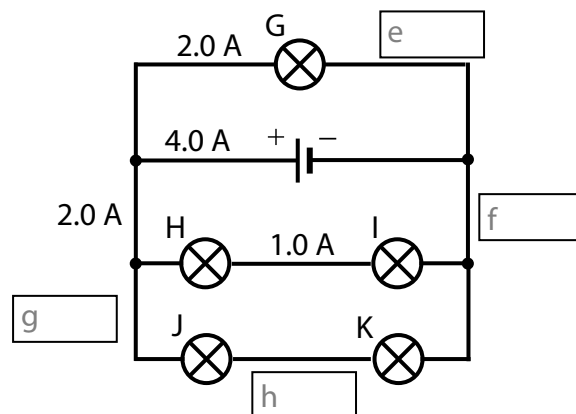
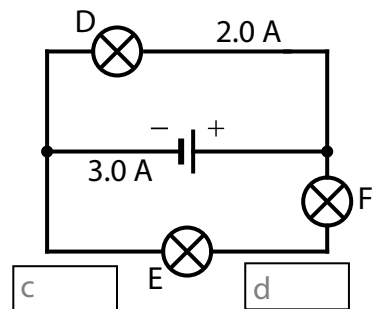
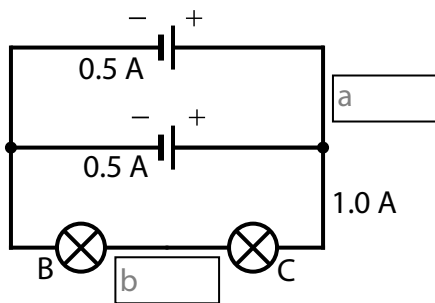
6 Write down the current in each of the boxes.



7 Write down the current in each of the boxes.



8 Write down the current in each of the boxes.



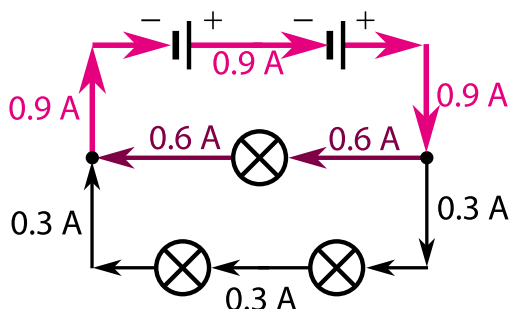
- 9 Go back to the circuits in questions 7 and 8. Which light bulbs are in **series** and which are in **parallel** with the other bulbs in the circuits.

- 10 Fill in the sentences with the words **brighter**, **current**, **light up**, **more**.

A light bulb will \_\_\_\_\_ if there is a \_\_\_\_\_ passing through it. The \_\_\_\_\_ current passes through a light bulb, the \_\_\_\_\_ the light bulb will shine.

- 11 Go back to the circuits in questions 7 and 8. The light bulbs are identical in those circuits. Which light bulbs will have the **same brightness**, which will be the **brightest** and which will be the **dimnest** in each circuit?

- 12 What have you noticed about current and light bulbs while working through these questions? Fill in the sentences with the words **series**, **parallel**, **shared**, **same**, **dimnest**.



(a) The current through two light bulbs in **series** will be the \_\_\_\_\_. They will have the \_\_\_\_\_ brightness, if they are identical.

(b) The current through light bulbs in **parallel** will be \_\_\_\_\_. The branch with the least amount of current will have the \_\_\_\_\_ light bulbs.

- 13 Label which light bulbs will have the **same brightness**, which will be the **brightest** and which will be the **dimnest** within each circuit.

