Current and Circuits

Electric charges travel round a circuit to create a _____.
Current is measured in _____ (A).
The charges can be _____ or _____. Electric charges are the _____ "material" in a circuit.
For _____ to flow around a circuit, the circuit must form a ____. We say it is _____.
If the circuit has a gap, it is **open**, and the current is ____.

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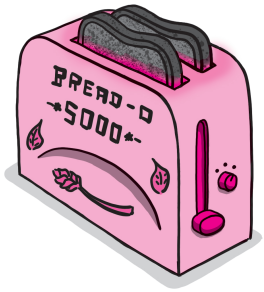
1 Which of these four situations are open open circuits and which are closed circuits?

(a) The bedside lamp is off.

(b) The phone is charging.

(c) The toaster is toasting bread.

(d) A remote control has a missing battery.



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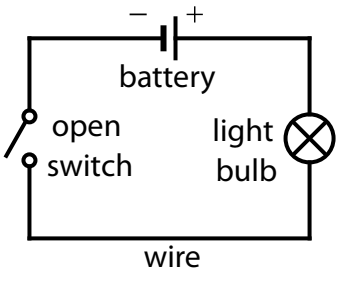
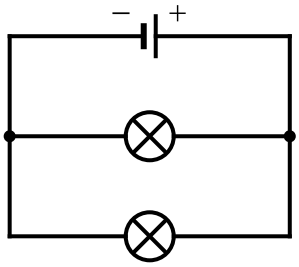
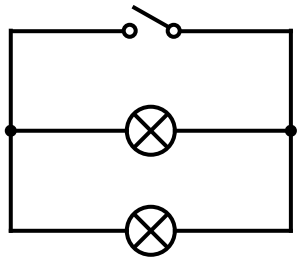
2 Which of these circuits are open and which are closed?



(a)



(b)



(c)

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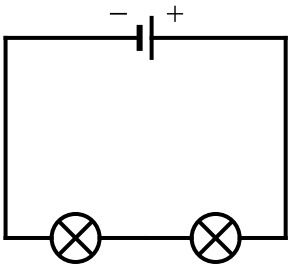
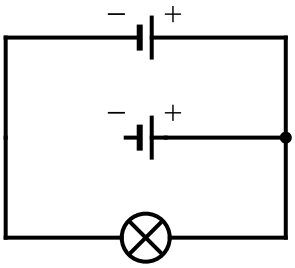
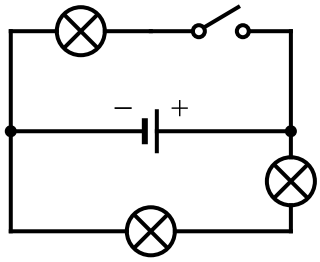
3 Draw around the closed loop in these circuits.



(a)



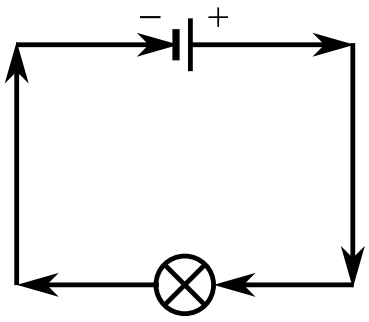
(b)



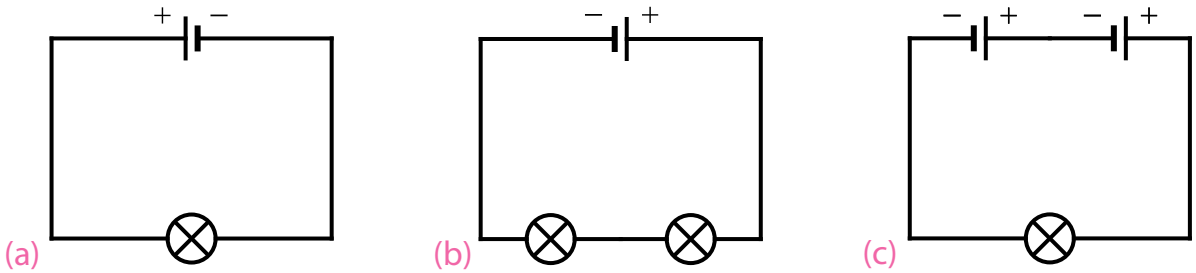
(c)

The direction of the _____ in circuits is the same as the _____ in which _____ charges would move.

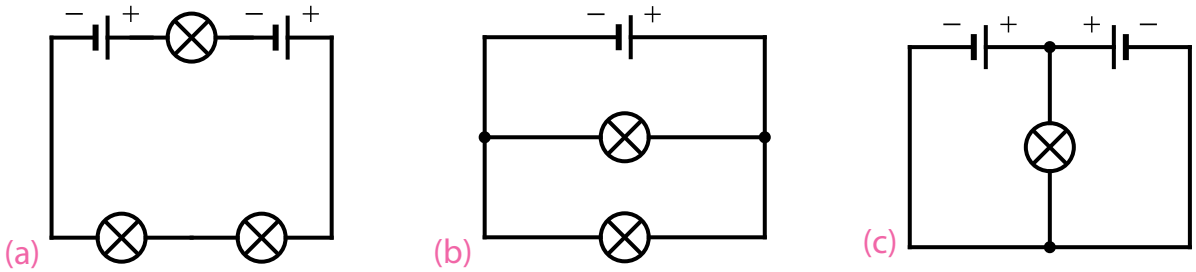
_____ charges will be _____ (pushed away) from the _____ (+) terminal of the battery. They are _____ to (pulled towards) the _____ (−) terminal of the battery.



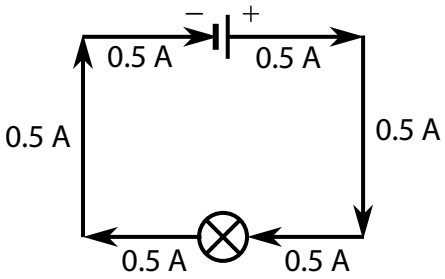
4 Draw arrows on the circuits in the direction of the current.



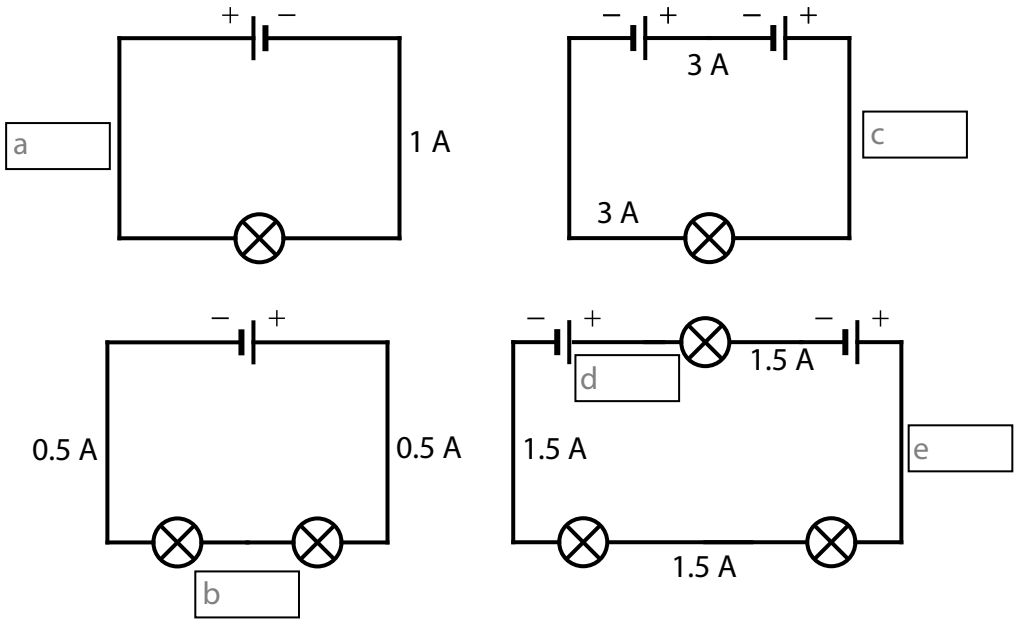
5 Draw arrows on the circuits in the direction of the current. Each line needs an arrow.



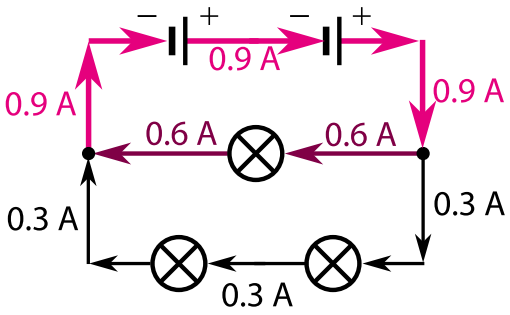
Charges in a _____ cannot be _____. The **total** amount of _____ in a _____ circuit is the _____ at all points. This is an important rule of charge and current.



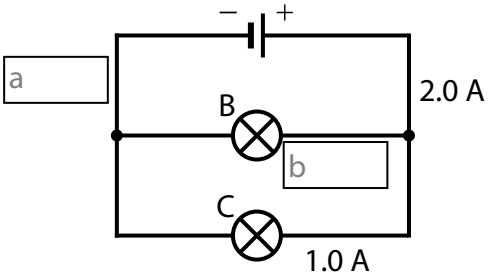
6 Write down the current in each of the boxes.

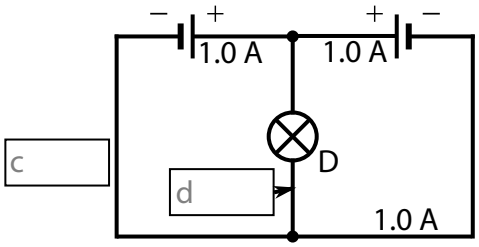


_____ circuits have _____. The _____ current _____ a junction must be the _____ as the _____ current _____ of the junction.

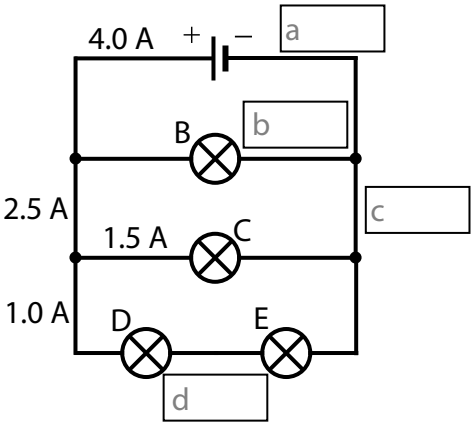


7 Write down the current in each of the boxes on these circuits from question 5.





8 Write down the current in each of the boxes.



If two light bulbs are on the _____ of the circuit, we say they are in _____. The _____ is the _____ through each bulb.
If two light bulbs are on _____ of the circuit, we say the bulbs are in _____. The _____ is _____ between the two _____ of the circuit.
When _____ passes through a _____, the bulb _____. For a circuit with identical light bulbs, the _____ one is carrying the most _____.

9 Fill in the sentences with the words **same, shared, most, brightness.**

(a) The current through two identical light bulbs in **series** will be the _____. They will have the same _____.

(b) The current through light bulbs in **parallel** will be _____. The branch with the _____ current passing through it will have the **brightest** light bulbs.

10 Go back to the circuits in questions 7 and 8. The light bulbs are identical in those circuits. Label which light bulbs will have the **same brightness**, which will be **brightest** and which will be **dimmest**.