Current and Circuits Practice

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.

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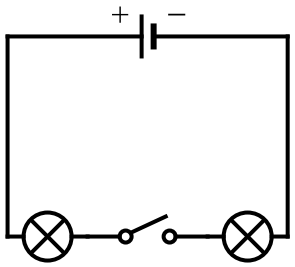
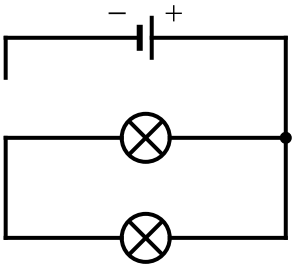
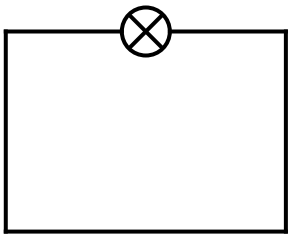
2 Which of these circuits are open and which are closed?

(a) 

(b) 

(c) 

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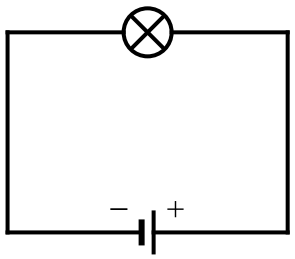
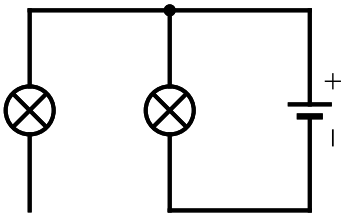
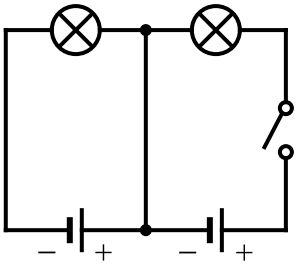
3 Draw around the closed loop in these circuits.

(a) 

(b) 

(c) 

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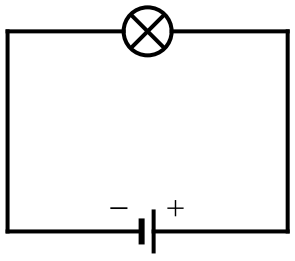
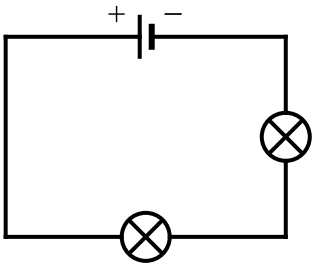
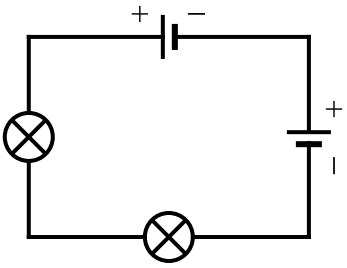
4 Draw arrows on the circuits in the direction of the current.

(a) 

(b) 

(c) 

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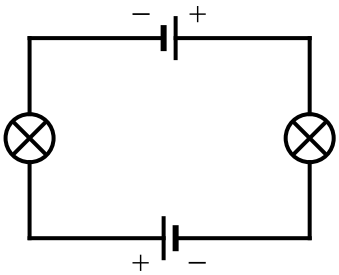
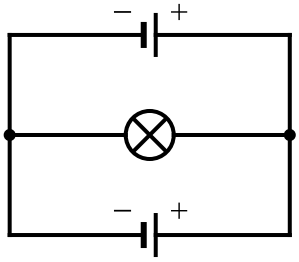
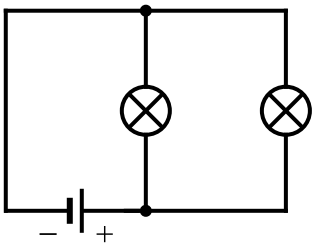
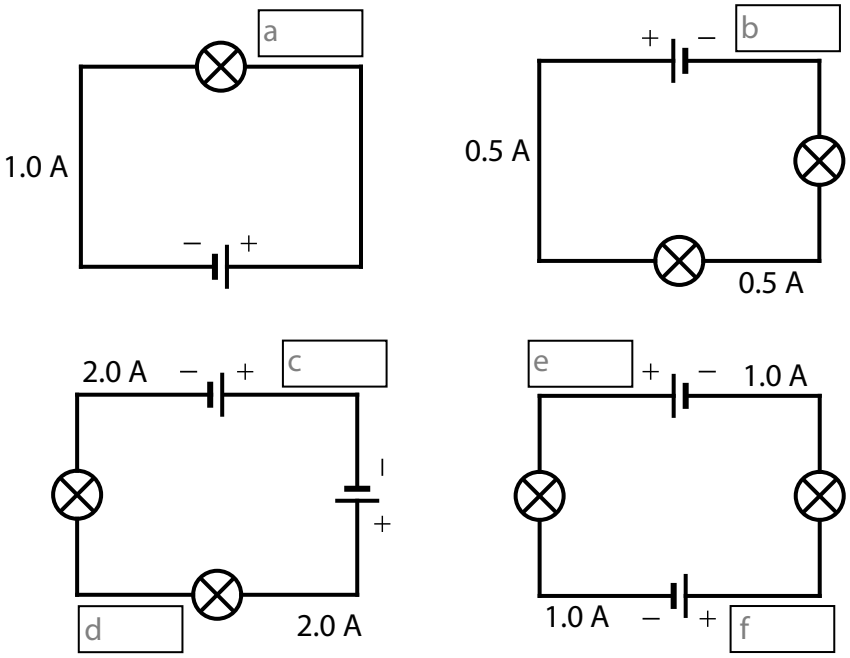
5 Draw arrows on the circuits in the direction of the current.

(a) 

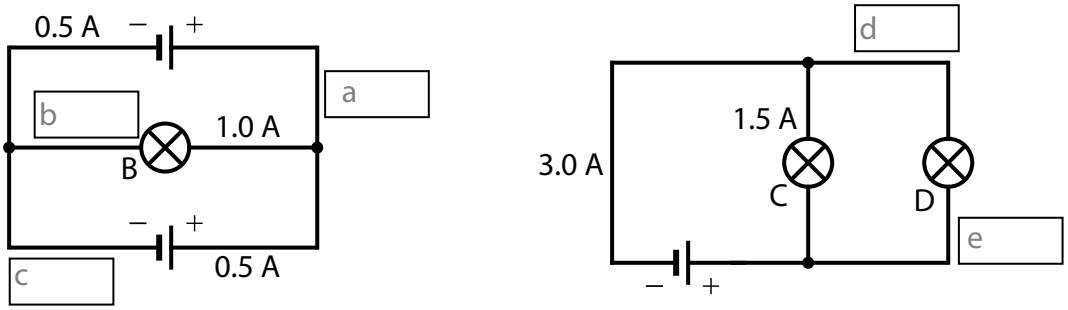
(b) 

(c) 

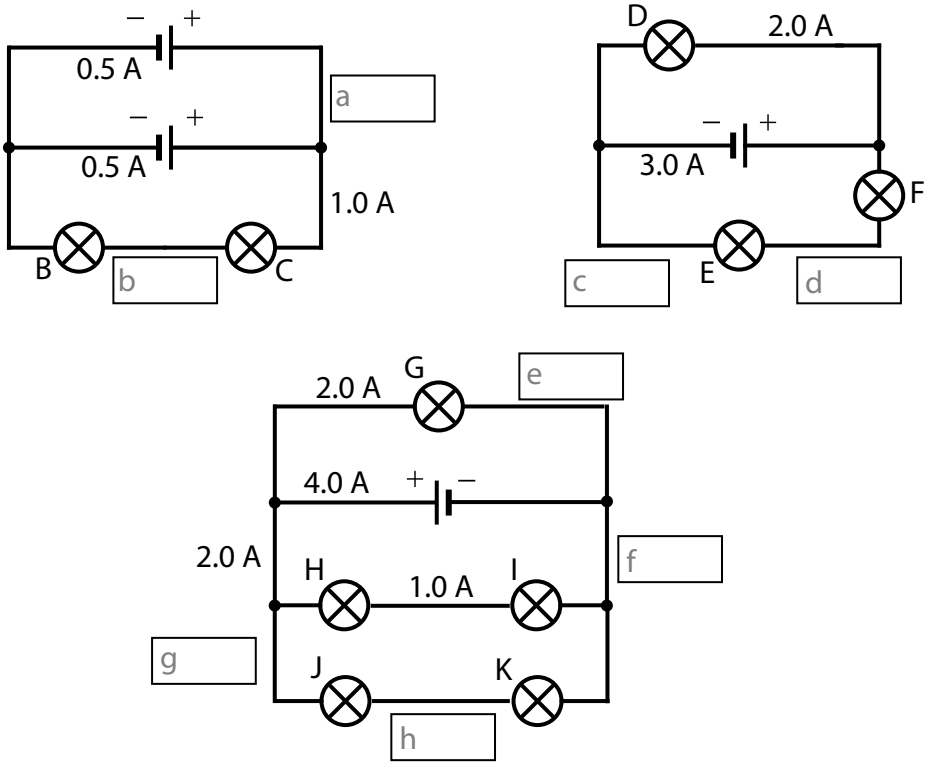
6 Write down the current in each of the boxes.



7 Write down the current in each of the boxes.



8 Write down the current in each of the boxes.

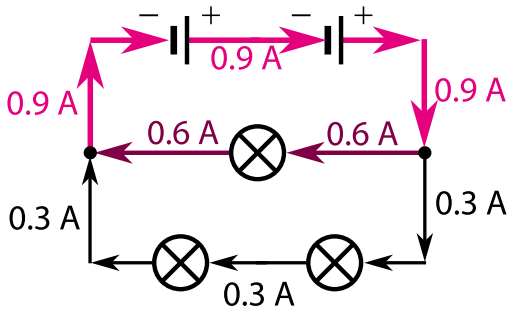


9 Go back to the circuits in questions 7 and 8. Which light bulbs are in **series** and which are in **parallel** with the other bulbs in the circuits.

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 **dimmest** 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, dimmest**.



(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 **dimmest** within each circuit.