Current and Circuits Practice

1 Which of these four situations are closed circuits?
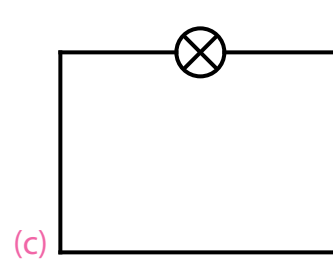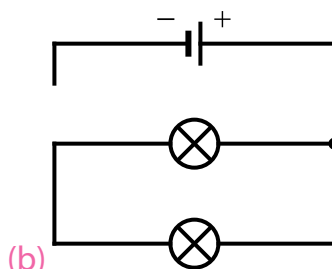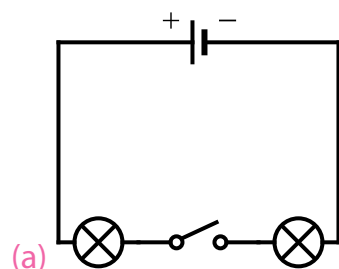(a) The kettle is off.

(b) The power button on the remote control is being pressed.

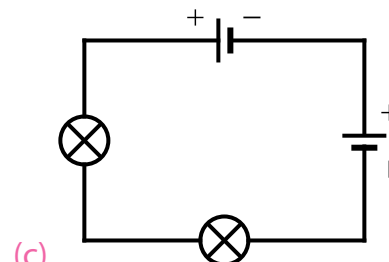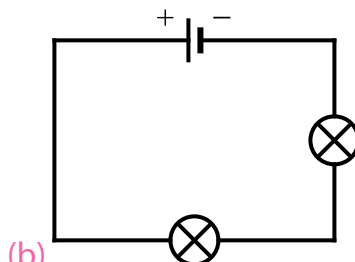(c) A remote controlled plane that is turned on.

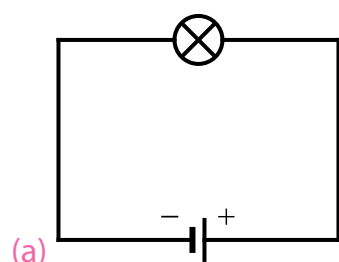(d) A washing machine that is turned off.
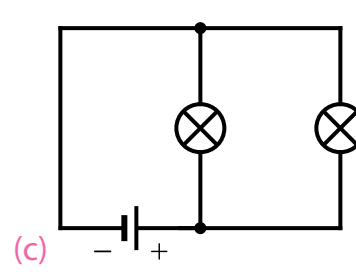
2 Which of these circuits are closed?
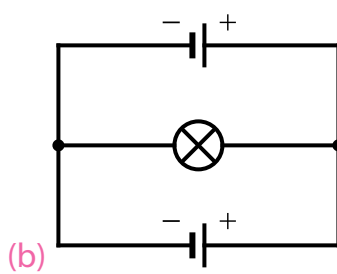
(a)

(b)

(c)

3 Draw around the closed loop in these circuits.
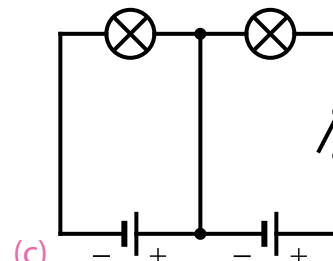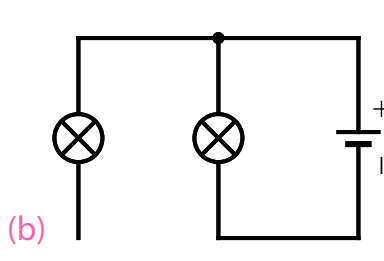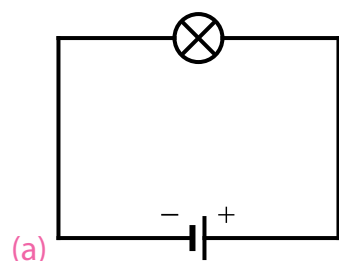
(a)

(b)

(c)

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

(a)

(b)

(c)

5 Draw arrows on the circuits in the direction of the current.
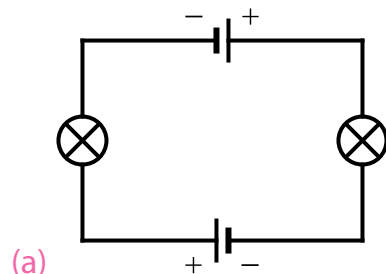
(a)

(b)

(c)

6 Write down the current in each of the boxes.
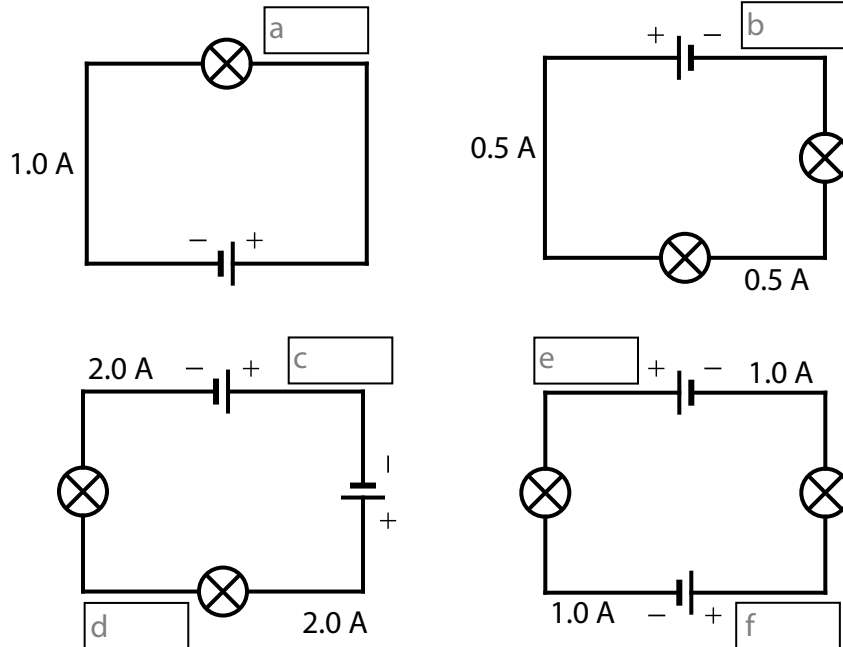
a [   ]

1.0 A

b [   ]

0.5 A

0.5 A

2.0 A c [   ]

d [   ]   2.0 A

e [   ]   1.0 A

1.0 A   f [   ]

7 Write down the current in each of the boxes.

0.5 A

b [   ]   1.0 A

a [   ]

B

c [   ]   0.5 A

d [   ]

1.5 A

3.0 A

C

D

e [   ]

8 Write down the current in each of the boxes.

0.5 A

0.5 A

a [   ]

1.0 A

B   b [   ]   C

D   2.0 A

3.0 A

F

c [   ]   E   d [   ]

2.0 A   G   e [   ]

4.0 A

2.0 A   H   1.0 A   I

f [   ]

g [   ]   J   K

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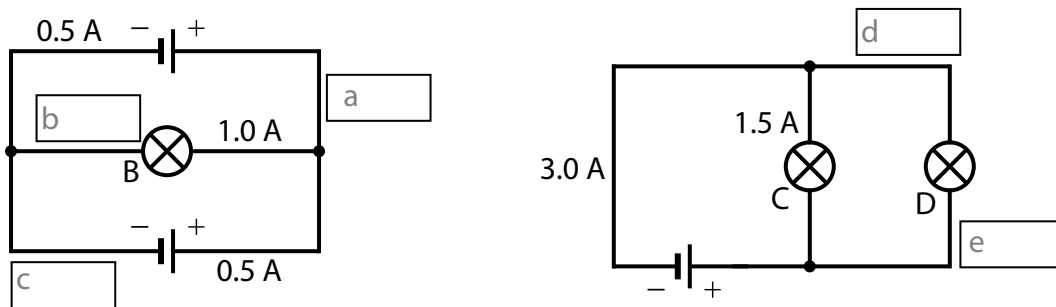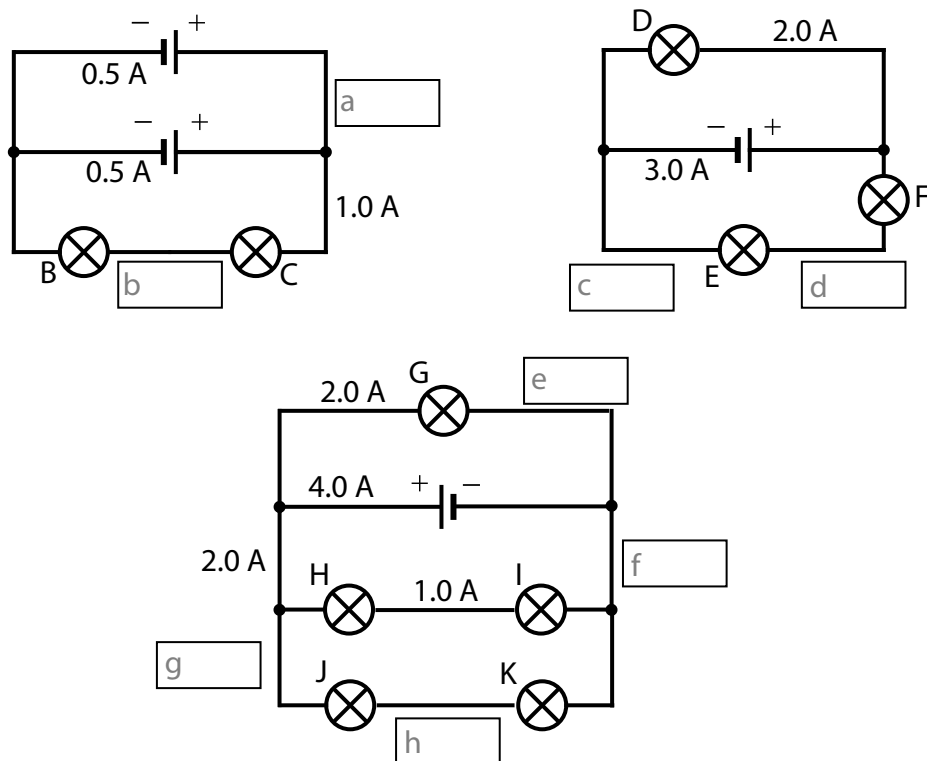
9   Go back to the circuits in questions 7 and 8. Label which light bulbs are in **series** and which are in **parallel** with the other bulbs in the circuits.

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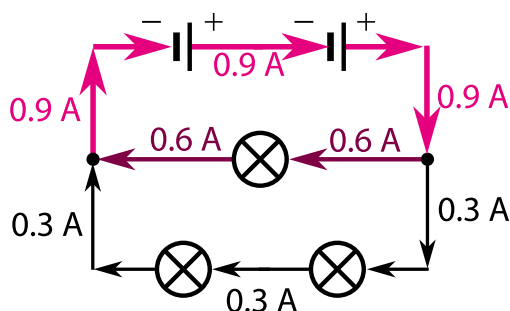
11 Go back to the circuits in questions 7 and 8. The light bulbs are identical in those circuits. Label which light bulbs will have the same brightness, which will be the brightest and which will be the dimmest.

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 bulb with the least amount of current will be the _____, if they are identical.

13 Label which light bulbs will have the same brightness, which will be the brightest and which will be the dimmest.