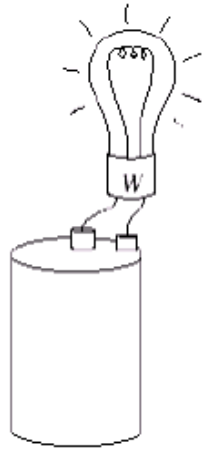


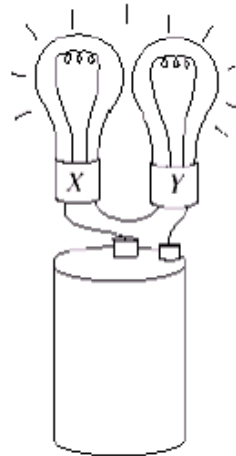
## SOME MORE ELECTRICITY REVISION

1. In each circuit below, the batteries are identical and the resistances of the bulbs W, X, Y and Z, are as shown. All the batteries have an EMF of 6.0 V. (2 marks)

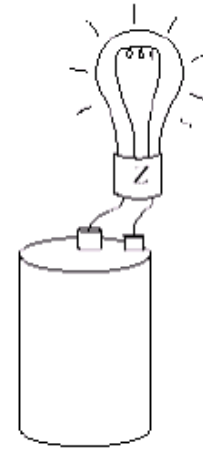
$$R_w = 2 \Omega$$



$$R_x = 2 \Omega \quad R_y = 2 \Omega$$



$$R_z = 4 \Omega$$



Write a statement that describes the relationship between the brightness of globes W, X, Y and Z.

---

---

2. You watch Mum clean the screen on the TV set. The next day you notice that the screen is just as dusty again. Using electrostatics, can you explain why. (3 marks).

---

---

---

---

---

---

---

3. Cheap appliances such as hair dryers often have only two pins instead of three. The missing pin is the Earth wire.

a. What is the purpose of the Earth wire? (2 marks)

---

---

---

---

b. How are these appliances made safe without the Earth wire? (2 marks)

---

---

---

---

4. Sandy is studying in the lounge of her old house, which she very recently moved into. On the same circuit, which can carry a maximum of 10 A before the fuse breaks, she has a fridge (rated at 600 W), a microwave (rated at 900 W) and a kettle (rated at 1500 W) all connected in parallel to each other but in series with the fuse. Having a break from her studies, she turns the kettle on. While waiting for the kettle to boil, she decides to defrost the chicken for tonight's dinner (she has never used all three appliances together before). When she turns the microwave on, the 240 V electrical supply goes off.

a. Explain to Sandy why the electricity goes off (calculations required to justify answer). (3 marks)

b. Give a safe way that Sandy could prevent this from happening in the future? (1 mark)

---

---

---

---

---

---

---

5. A way to 'zap' your friends is to rub your feet on a carpet in summer so as to build up a charge, then you touch a friend and they get 'zapped'. Why do you build up a

charge when you rub your feet on carpet and what causes the 'zap' when you touch your friend? (3 marks)

---

---

---

---

---

---

---