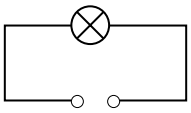
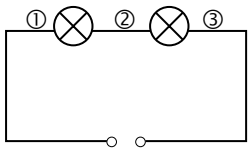
1.



2. a) ① Series circuit, ② Parallel circuit

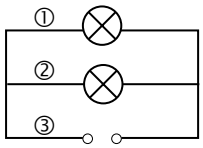
b) in ① both lamps go out, in ② only the one that was unscrewed from the socket

c)



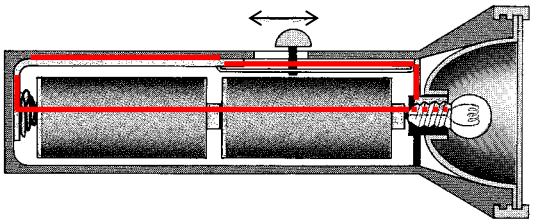
at ①, ② or ③

d)

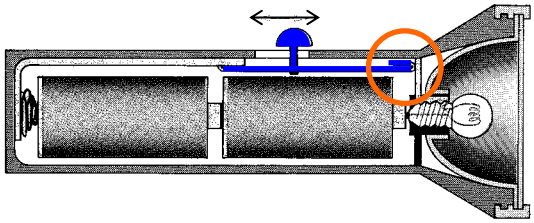


both: at ③, the upper one: at ①, the lower one: at ②

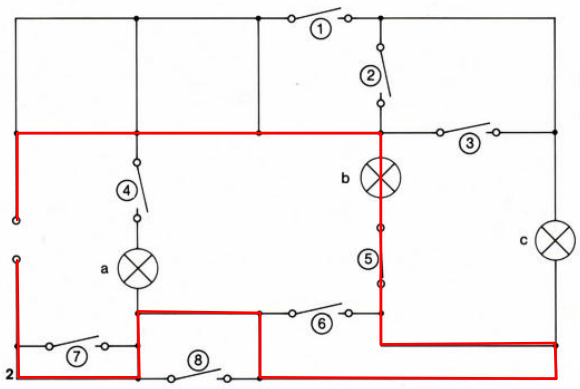
3. a)



b) The button is attached to the metal rod. If the button is moved to the left the electric loop is interrupted at the point shown by an orange circle (see picture).



4. a) Only lamp **b** is on (red line).
b) If only **a** shall be lit, switch 4 needs to be closed and switch 5 needs to be open. If only c shall be lit, switch 5 needs to be open and the switches 3 or 1 need to be closed.
c) All lamps are lit if the switches 4 and 5 and 1 or 3 are closed. The switches 6, 7 and 8 have no effect.



5. a) Only the fan will go on (cold air).

b) heating *and* fan are on (hot air).

c) nothing - neither heating nor fan are on.

d) It doesn't make sense to have a hairdryer with no air being blown out - besides, without air blowing over it the heating coil would overheat quickly.

6. a) 2 and 3

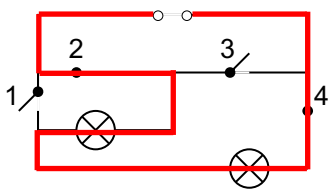
b) 1 and 3

c) none

d) 1 and 2 in parallel, those two together in series to 3

7. a) 2 and 4

b) in series



8.