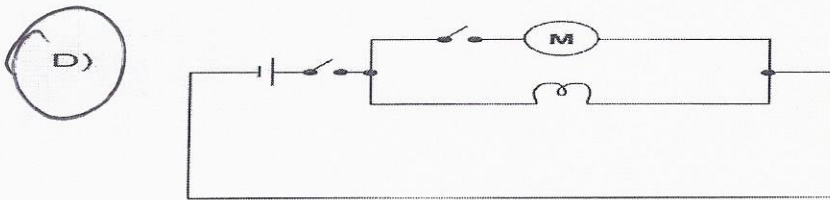
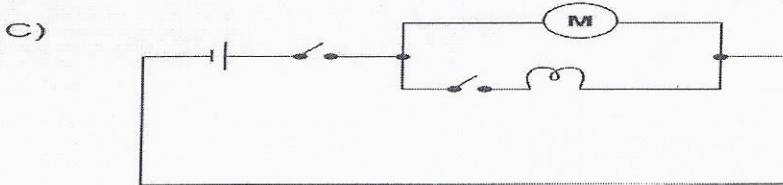
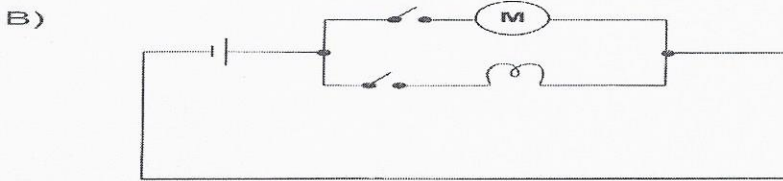
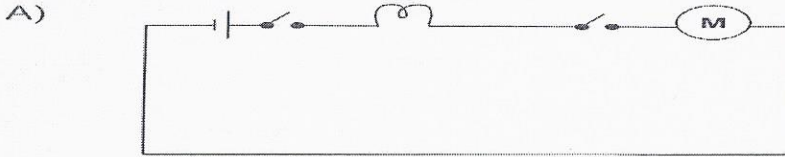
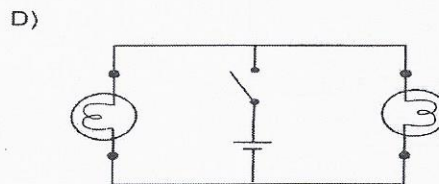
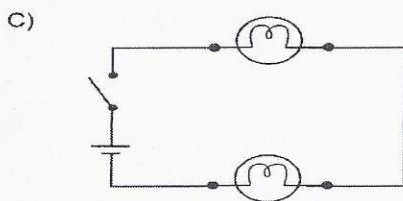
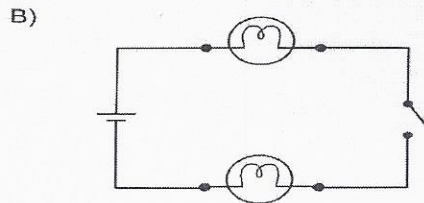
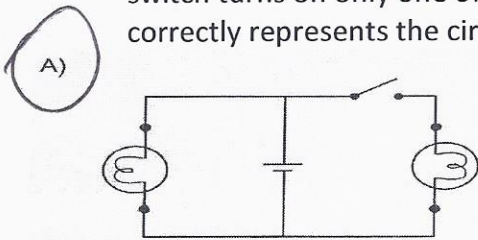


## Circuit worksheet 2

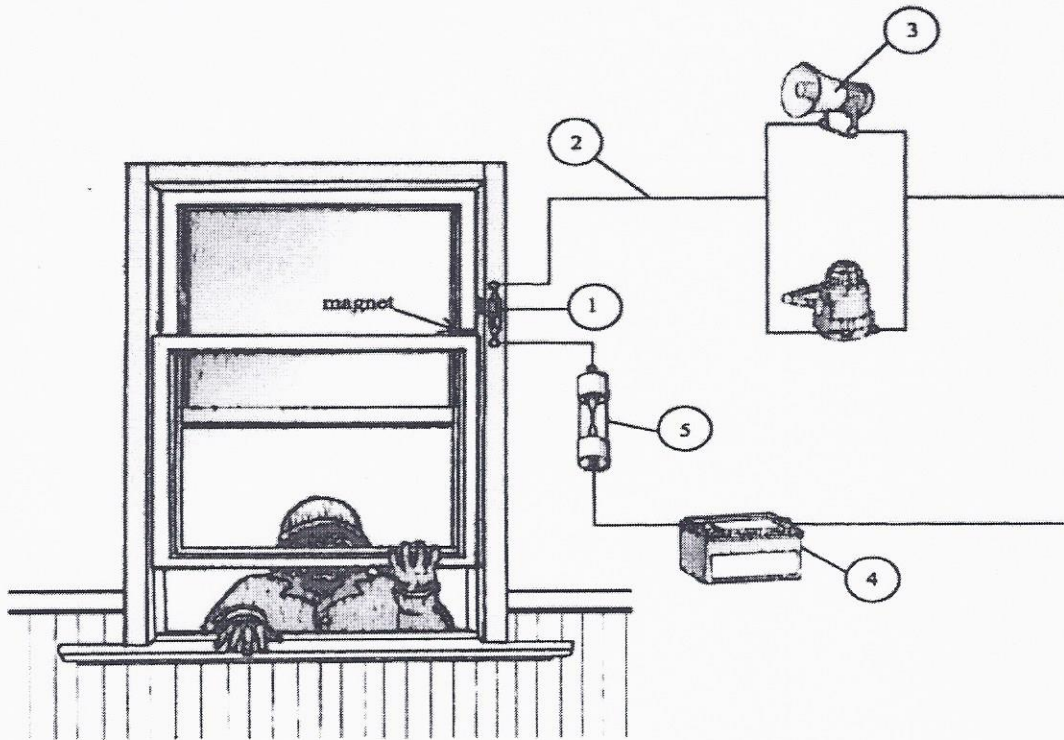
1. When a grocery store check-out clerk is ready to serve customers:
- he must press a switch to turn on a light indicating that the cash is open
  - he can start the conveyer belt motor, if necessary, by using another switch
  - he can start the conveyer belt motor only if the light is on to indicate that his cash is open
- Which electrical circuit represents the situation described above?



2. You have 2 lightbulbs, a battery and a switch. You must build an electrical circuit whose switch turns on only one of the two light bulbs. Which of the following diagrams correctly represents the circuit described above?



3. The electrical circuit of a magnetic alarm system is illustrated in the diagram below.



What is the electrical function of component 3 in this electrical circuit?

- A) Power supply    B) Control    C) Conduction    D) Transformation

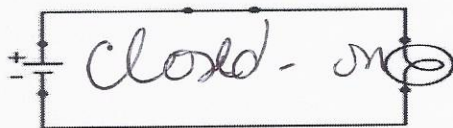
4. Using the answers from number 3, what is the electrical function of number 2?

*Whistle - allows electron flow*

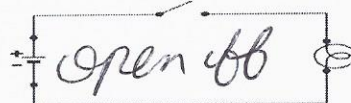
5. Look at the electrical circuit.

- a) Determine if each circuit is an open or closed one.  
 b) Determine if the light bulb will be on for each circuit.

Circuit A

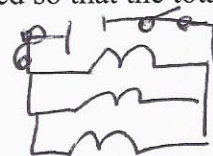


Circuit B



6. In the lab, you have been given the following materials: a battery, three lamps, two switches and a fuse. You must assemble a circuit containing the battery, one switch and the three lamps. The lamps are to be connected in parallel, and they must all turn on at the same time and give off the same intensity of light. The fuse must be installed so that the total current intensity does not exceed 2.4 A.

a) Draw the diagram for this electrical circuit.



b) What would happen if the current in the circuit in question a) were to exceed 2.4 A?

*The fuse would blow + current would stop.*

7. Fuses and breakers perform the same function in electrical circuits. What is this function called?

*protection*

8. When a lamp is switched off, is the electrical circuit to the light bulb open or closed? Explain your answer.

*open & no current flow occurs*

9. When you go to a friend's house and ring the doorbell, an electrical circuit is activated, and the doorbell rings.

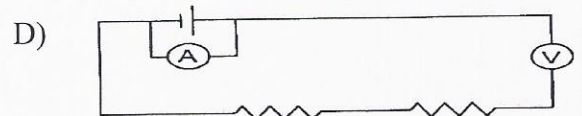
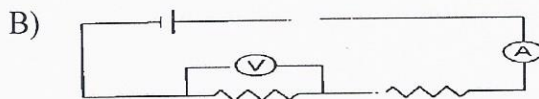
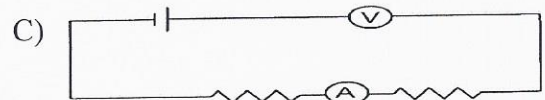
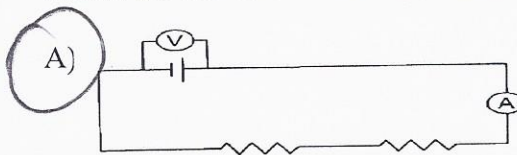
a) When you press the button for the doorbell, you close an electrical circuit. Which function does the push button perform in the circuit?

*switch*

b) The doorbell is covered in plastic. Why? Which function does this small round plastic cover perform?

*protects from electric shock*

10. Examine the four electric circuits below. Each consists of a power supply, two resistors, an ammeter and a voltmeter. You wish to measure the potential difference across the terminals of the power supply as well as the total current intensity of the circuit. In which circuit are the voltmeter and the ammeter correctly connected?

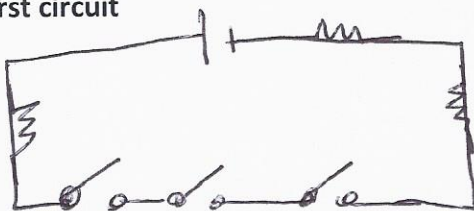


11. Your teacher describes two different mystery circuits. Each contains three switches, three identical resistors and a power supply. Draw each circuit correctly.

**In the first circuit-** all three switches must be closed for the current to flow through the resistors.

**In the second circuit-** each time one of the switches is opened, current flows through the other two resistors.

First circuit



Second Circuit

