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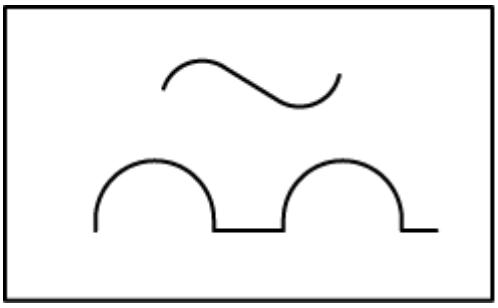
Connection of a Digital MultiMeter, DMM, for measuring of DC-voltage, DC-current, AC-voltage, AC-current and resistance in non-complicated circuits!

On the following pages, you will complete the pictures for measuring the different electrical units in those circuits.
Keep in mind that when measuring voltage and current that the cucuit must be closed, all components must therefor be connected in the right way with each other.
You also need to be aware that the Voltage always is measured in parallell with the load and measuring the current in serial with the load.

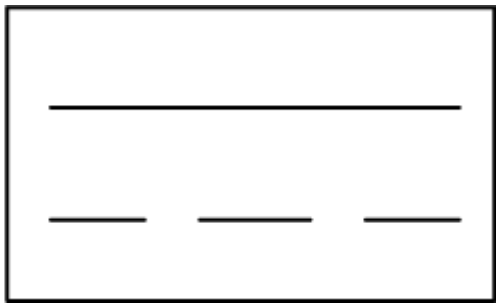
Colored pencils are extremly helpful to use when completing those circuits: **Red** and **Black** for the wires connected to your Multimeter makes it much easier to separate positive terminal from the negative terminal of the circuit.
Other useful colors are **Yellow**, **Blue** and **Green**!
OBS! In the first part you don't havet o decide wich range of your multimeter scale you should use or not. In other words: Not the maximum current, maximum voltage or maximum resitance your instrument can measure!

When measuring the resistance in a circuit or a specific component You must make sure that's there is NO VOLTAGE CONNECTED TO THE CIRCUIT and that's there is no current flowing in any leads at all in the same circuit!
To make all this easier for you, I'll provided every circuit with a power switch wich you need to "activate" when needed. Actually: only when measuring voltage or current – when measuring the resistance you need to leave that switch in open state.
All components drawn in all electrical circuits is always drawn in a "non active state".

Important symbols:



AC/Alternating Voltage/Alternating current



DC/Direct Voltage/Direct Current

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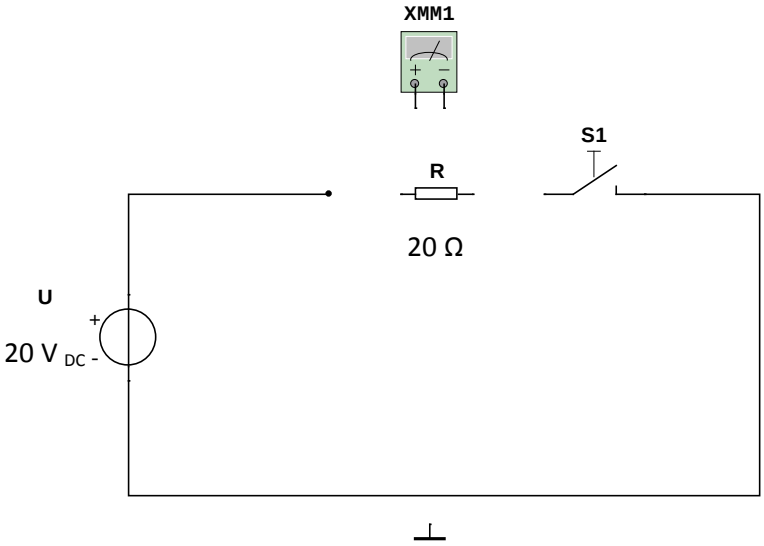
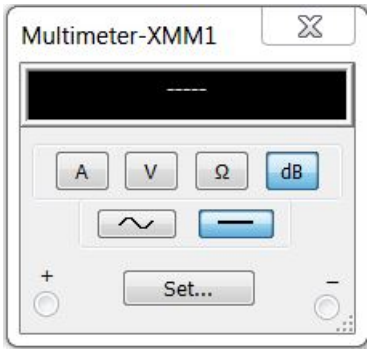
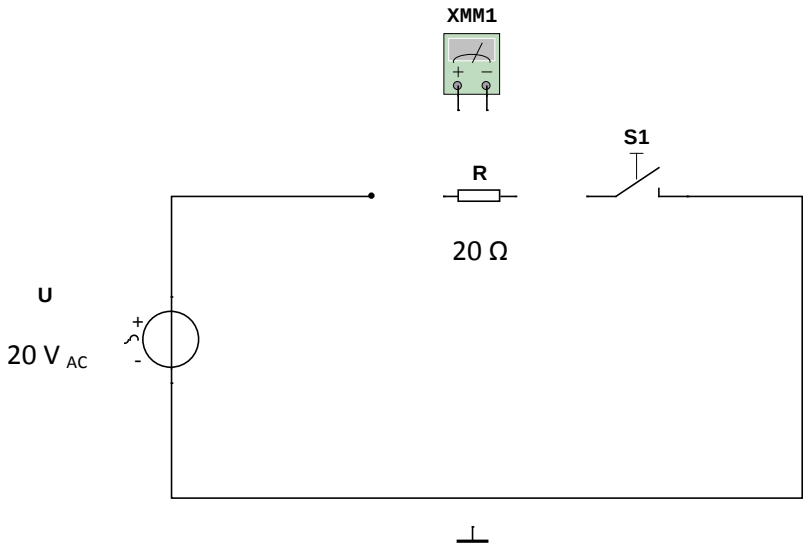
1: Connect the instrument for measuring the direct voltage in this circuit!

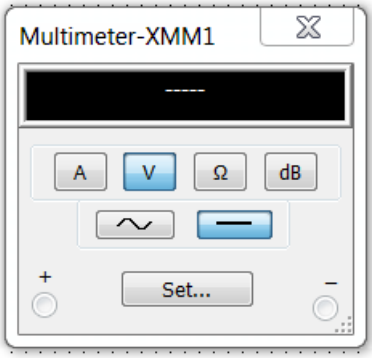




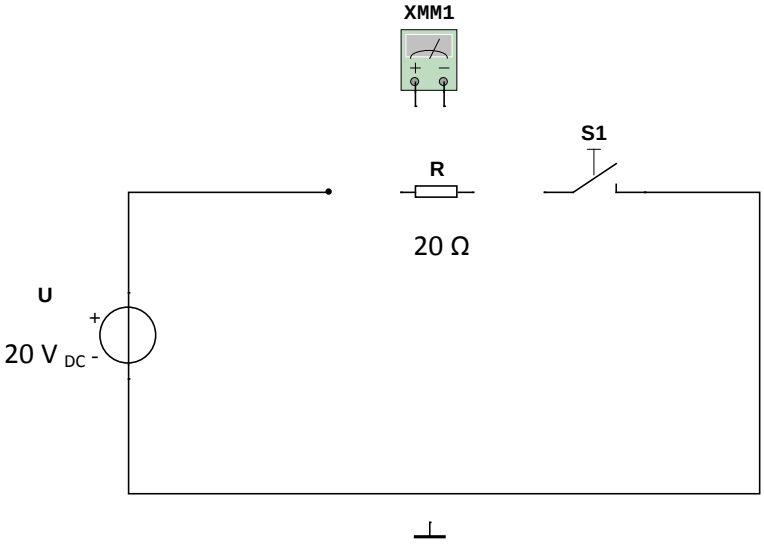
Draw a circle around the correct button/symbols on the instruments marked “Multimeter-XMM1”

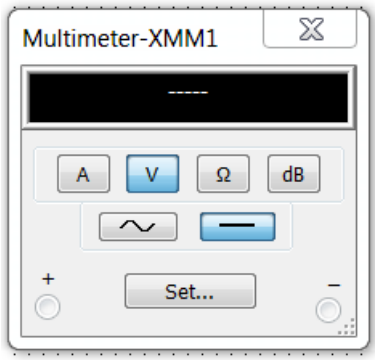
2: Connect the instrument for measuring alternating voltage!



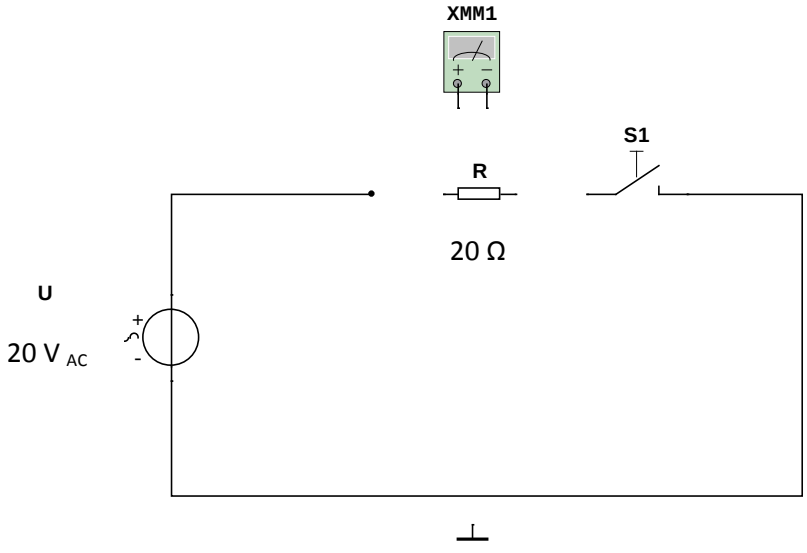


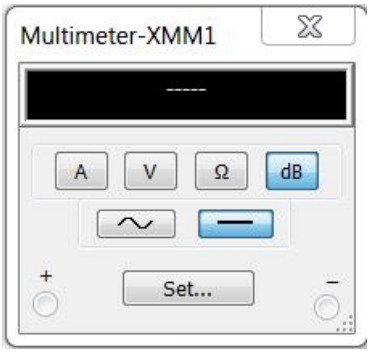
3: Connect the instrument to measure Direct current!



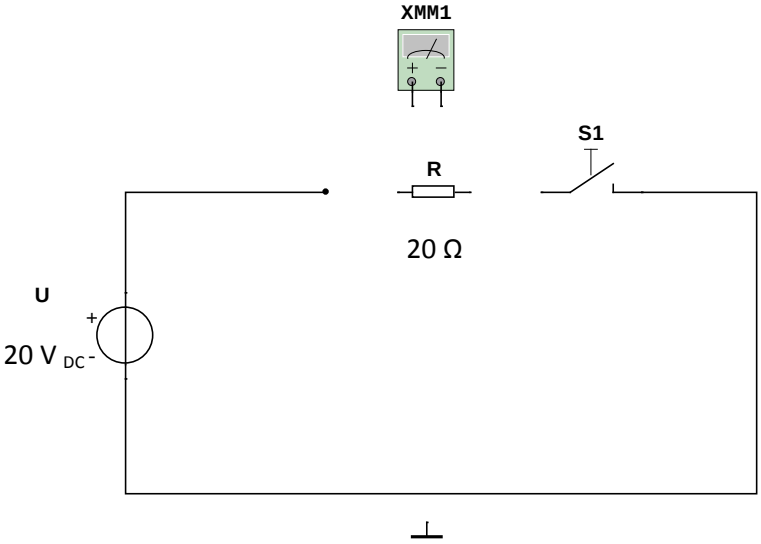


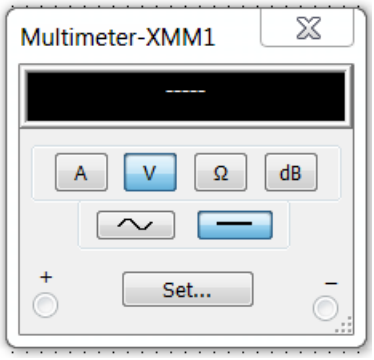
4: Connect the instrument to measure Alternating current!



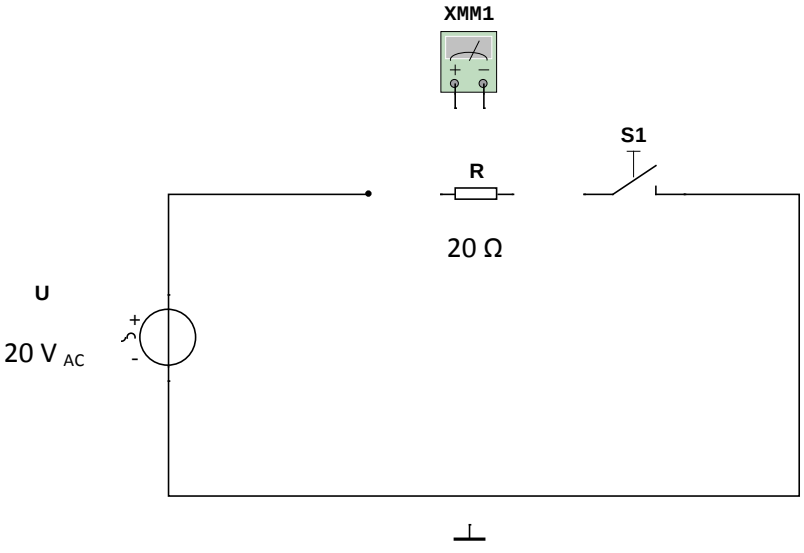


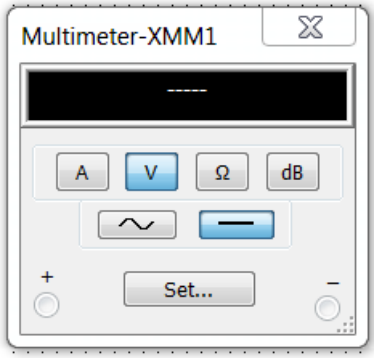
5: Connect the instrument for measure resistance!





6: Connect the instrument to measure Alternating voltage!





In the following exercises you need also to chose the CORRECT RANGE on your instrument.
Draw a circle around the correct range AND unit on the picture of the real instrument!
To succeed you need to do some calculating, using Ohms Law!

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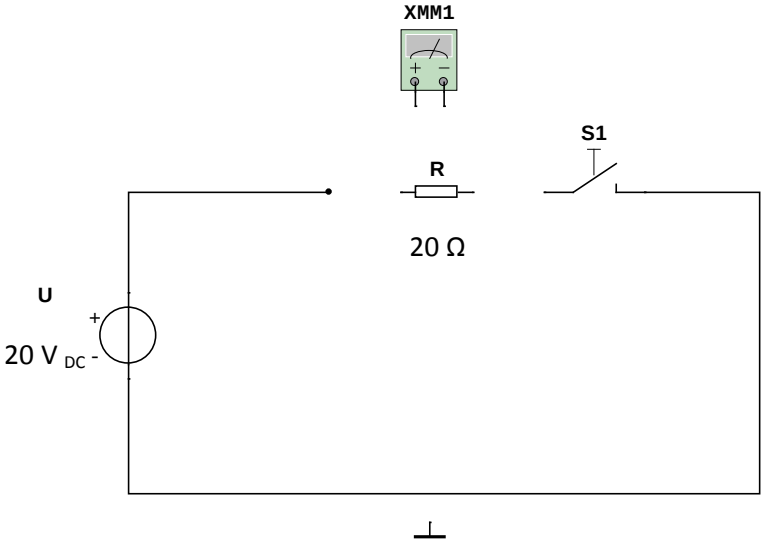
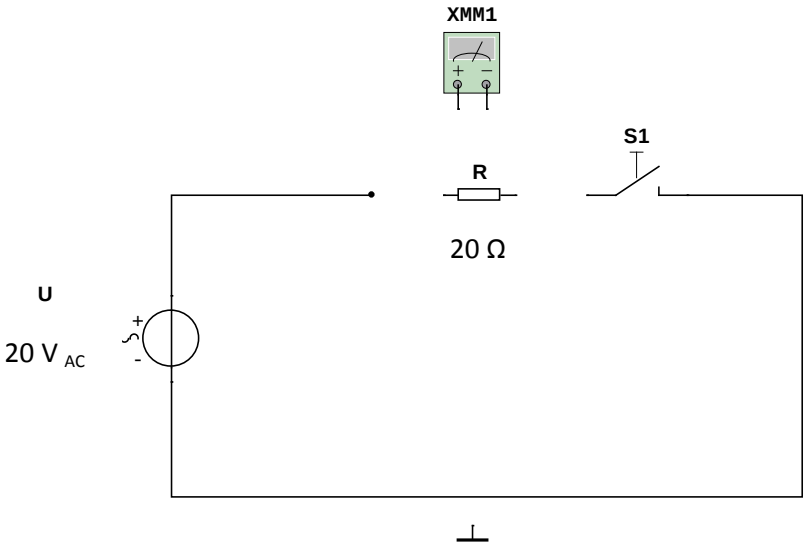
1: Connect your instrument to measure Direct voltage!

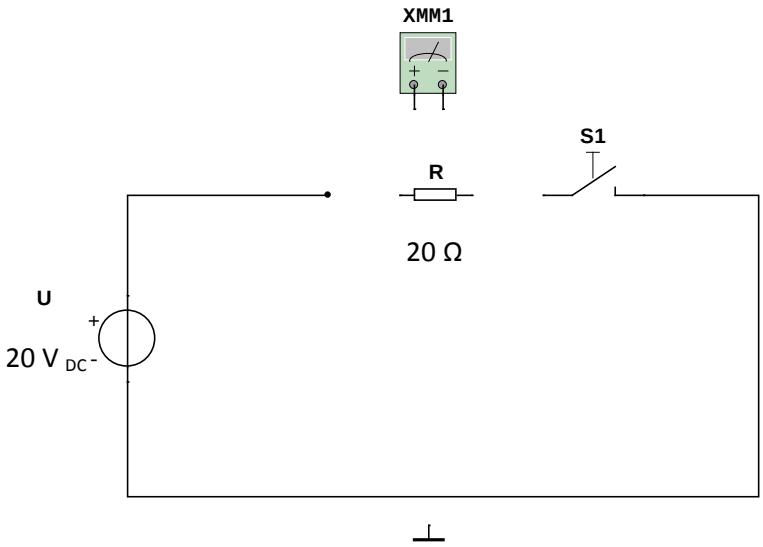


Draw a circle around the correct range AND unit on the picture of the real instrument!

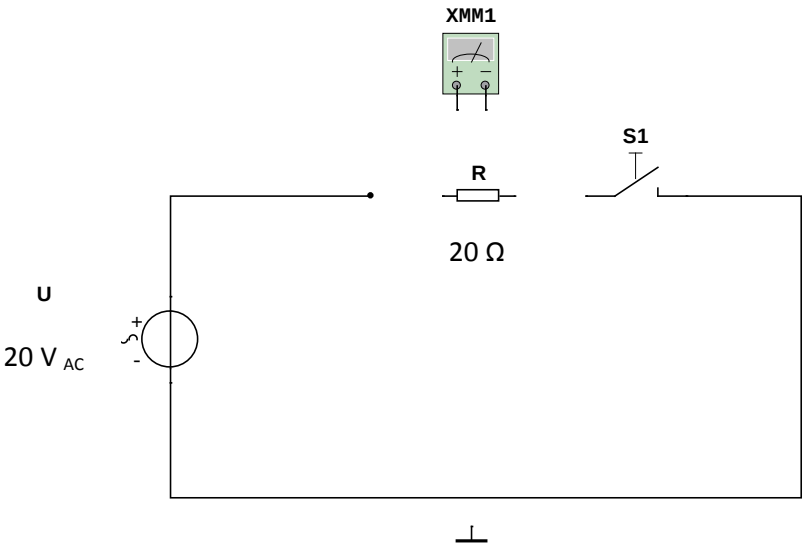
2: Connect your instrument to measure Alternating voltage!



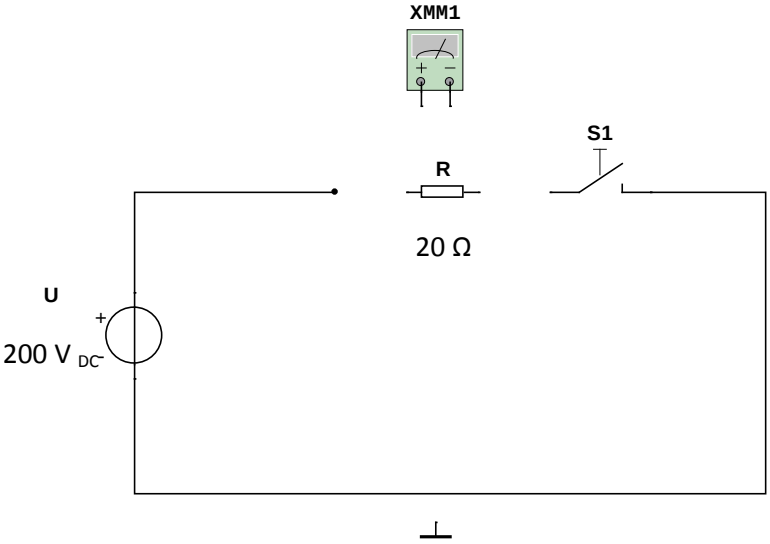
3: Connect the instrument to measure Direct Current!



4: Connect your instrument to measure Alternating Current!



5: Connect your instrument to measure Direct voltage!



6: Connect your instrument to measure Alternating voltage!