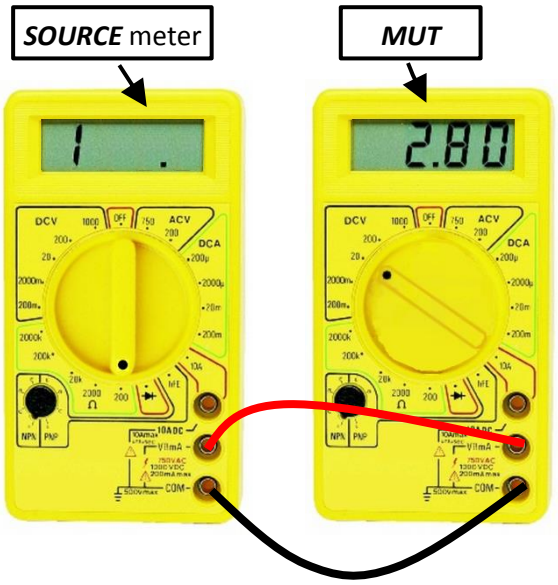
DVM QUICK TESTS

This is a quick series of tests to check simple digital multimeters (DVM) for basic functionality.
It works best for quantity of the same brand and model such as a class set.
If a meter fails ONE test then that range is faulty,
if it fails more tests then the meter probably is not worth repairing

TEST (1) – *checking the ohms range, the battery and the display*
Select your first meter; select the **200 Ω** (ohms) range
Plug a test lead from the **COM-** socket to the **VΩmA** socket
Carefully check that the display correctly shows close to **00.0**.
Say in the range **00.0 to 03.0** (e.g. **00.2**)
If it reads higher or has an unstable reading the lead connections are bad.
Once you have a meter that passes this test we will use it as our ***SOURCE*** meter. It is used to output the test voltage for the other tests and we can ignore its display.

Now repeat TEST (1) to on the first meter to be fully tested
– we will call this our METER UNDER TEST (***MUT***).

When that ***MUT*** passes TEST (1) proceed to TEST(2)



TEST (2) – *checking the voltage ranges*
Connect a test lead between the **COM-** sockets of the ***SOURCE*** meter and the ***MUT***.
Connect another test lead between the **VΩmA** sockets of the ***SOURCE*** meter and the ***MUT***.

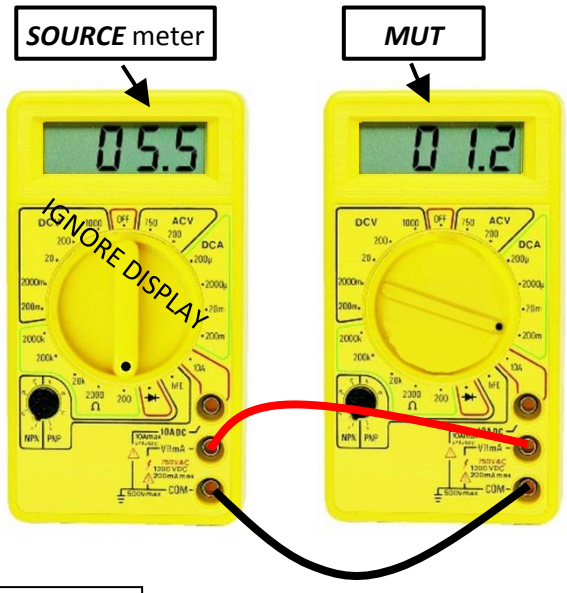
(a) On the ***MUT***; select the **20 DCV or V⎓** (20 volt dc) range
On the ***SOURCE*** meter; select the **200 Ω** (ohms) range
Check that the display correctly shows a voltage in the range of **2.00** to **3.00**.
(Take note of the voltage to compare with other meters)

(b) Increase the ***MUT*** range to **200 DCV or V⎓** and check that the display shows the same voltage
– remember we are now on a 200 volt dc scale and so the number of significant figures changes. eg. 02.0 to 03.0

(c) Increase the ***MUT*** range to **1000 DCV or V⎓** and check that the display shows the same voltage.
eg. 002 to 003 *NOTE this range may display a* 'HV' *or similar high voltage range warning*

When that ***MUT*** passes TEST (2) proceed to TEST(3)

TEST (3) – *checking the current ranges*
With the test leads between the ***SOURCE*** meter and the ***MUT*** in the positions as for TEST (2);
On the ***MUT***; select the **200m DCA or A⎓** (200 mA DC) range
On the ***SOURCE*** meter; select the **200 Ω** (ohms) range



(a) Check that the display shows a current in the range of **1.00** to **3.00** correctly.

If the display stays at **000** then most likely the internal fuse has failed and will need replacing.

(b) Decrease the ***MUT*** range to **20m DCA or A⎓** and check that the display shows a current in the same range.

These tests do not test all the capabilities of the meter but will eliminate meters with that have the most common faults.

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