(3pts) A voltmeter is placed in series with a 3 volt light bulb and a 1.5V battery. What happens? Be descriptive.

Visual of circuit set-up

- is the 1.5V battery
- is the 3V light bulb
- is the voltmeter

The light bulb can be considered as a coil of wire, or as a resistance, the set-up then becomes

which is also equivalent to:

Since a voltmeter ideally has infinite resistance, no current will flow through the meter, and it will read the voltage on the battery, 1.5V.

Also: Since there is no current flowing in the circuit, the light bulb will be off.