



2. To apply Ohm's Law in calculating the current flowing through a light lamp with a power rating of 0.75W at a supply voltage of 9V, and connected to a digital output (D3), we start by understanding the relationship between power, voltage, and current. Ohm's Law is traditionally stated as eq. 1, but we can also express electrical power ( $P_e$ ) in terms of voltage and current as eq. 2:

$$P_e = VI \quad (2)$$

Since we are again interested in electrical current through lamp we can fill in the data:

$$I_{D3} = \frac{P_e}{V} = \frac{0.75W}{9V} = 83mA \quad (3)$$

### 3.2.1 Questions

1. Calculate electrical current through resistor  $R_1$  if the voltage across it is  $U_{R_1} = 7.2V$ !
2. Calculate the current through resistor  $R_4$  if measured voltage potential on  $A_0$  pin is  $V_{A_0} = 2V$ !