

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:

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

4.2.1 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 $V_{A_0} = 2V$!