11th May

1. A student is investigating the current-voltage characteristic of a filament bulb.

PD / V	0.0	2.0	4.0	6.0	8.0	10.0
Current / A	0.00	0.60	1.05	1.40	1.65	1.85

   a. Use the data in the table to calculate the **resistance** when the PD is:

      i. 4.0 V

      ii. 8.0 V

      iii. 10.0 V

   b. **Plot** the results in the table on the axes provided.

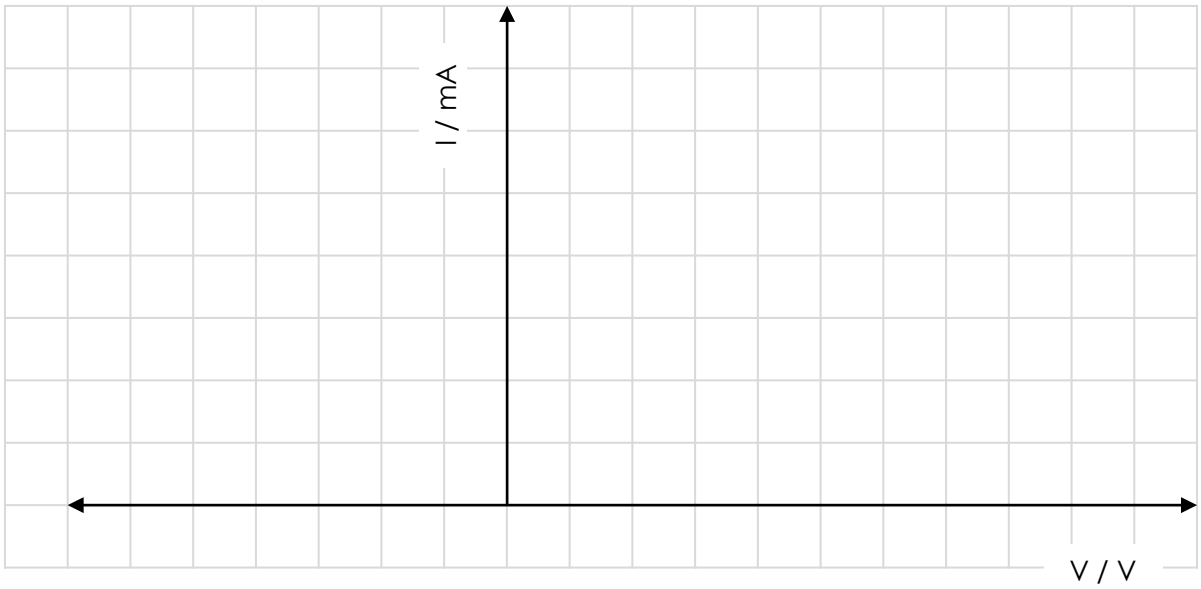
   c. Calculate **1/gradient** of the line at 8.0 V and **compare** this to the value of a. part ii.

12th May

1. A diode is connected in series with an ammeter, a resistor, and a variable power supply. A voltmeter is connected in parallel with the diode. The PD across the diode, V, is varied, including changing the polarity, and the current, I, is recorded for each value.

PD / V	-0.50	-0.25	0.00	0.20	0.50	0.60	0.64	0.68	0.70	0.72
Current / mA	0.0	0.0	0.0	0.0	1.0	3.0	6.0	22	40	80.0

a. **Plot** the data



b. Calculate the **resistance** of the diode at:

i. 0.60 V

ii. 0.70 V

c. Research how a diode can be used in **half-wave** and **full-wave** rectification for an AC supply and sketch a graph of PD against time for these two uses