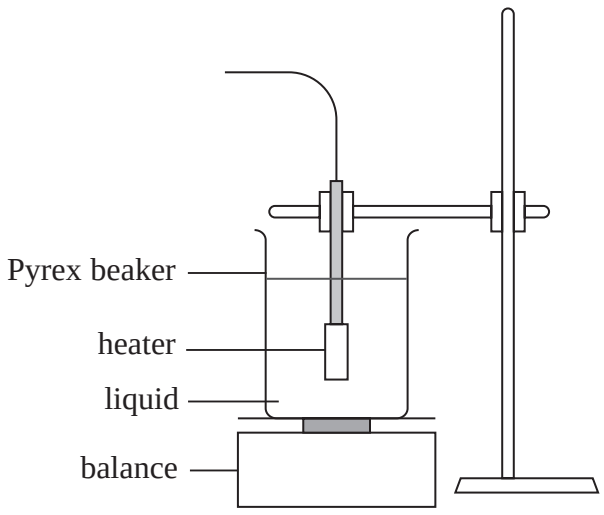
6 A student determined the latent heat of vaporisation of a liquid using an electrical heater to boil the liquid in a Pyrex beaker.

The apparatus used is shown below.

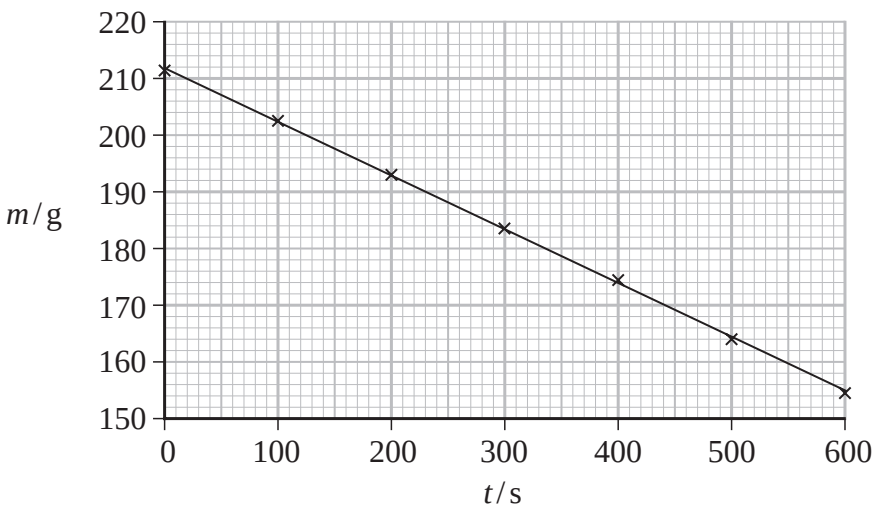


(a) She connected the heater into a circuit and took measurements of the potential difference V and the current I for the heater.

Complete the circuit diagram to show a suitable circuit.

(2)

(b) The student monitored the mass of the beaker and the liquid m over the time t for which the liquid was boiling. Her results are plotted on the graph.



The student used her graph to determine a value for the latent heat of the liquid in the beaker. She concluded that the liquid was pure water.

Liquid	Latent heat of vaporisation / MJ kg^{-1}
Pure water	2.26
Weak salt water solution	2.10
Strong salt water solution	2.00

Comment on the validity of the student's conclusion.

$V = 20.5\,V$

$I = 10.5\,A$

(7)

(c) Explain how this method might be modified to improve the accuracy of the student's conclusion.

(2)

(Total for Question 6 = 11 marks)