2 **(a)** Evaporation and boiling are both processes by which a liquid changes state to become a vapour.
State one difference between evaporation and boiling.

.....

.....

..... [1]

(b) When 1.00 kg of liquid water becomes water vapour at a temperature of 100 °C and a pressure of 1.05×10^5 Pa, the change in volume is 1.69 m^3.

Calculate the work done against the atmosphere during this change.

work done = ... J [2]

(c) The specific latent heat of vaporisation of water is 2.30×10^6 J kg^{-1}.
The mass of 1.00 mol of water is 18.0 g.
Use your answer in **(b)** to determine the average increase in internal energy of a water molecule as boiling occurs.

average increase = ... J [3]