3. 350 g of liquid water at 100 ºC is turned into steam at 100 ºC at an atmospheric pressure of 1.0×10^5 Pa.
[Density of water = 1000 kg m^{-3};
Mass of one mole of water molecules = 18 g;
Specific latent heat of vaporisation of water = 2.26×10^6 J kg^{-1}]

(a) Assuming that the steam behaves like an ideal gas, calculate its volume. [3]

(b) Calculate the work done by the steam as it expands against the atmosphere. [3]

(c) Calculate the increase in internal energy of the liquid water as it turns into steam. [3]

(d) State the form of energy that the increase in internal energy takes. [1]