

A Level Physics A
H556/01 Modelling physics

Question Set 8

1 A plastic kettle is filled with 0.60 kg of water at a temperature of 20 °C.
A 2.2 kW electric heater is used to heat the water for a time of 4.0 minutes.

(a) Calculate the total energy supplied by the heater during the time of 4.0 minutes.

energy = J [2]

(b) The specific heat capacity of water is 4200 J kg⁻¹ K⁻¹ and the specific latent heat of vaporisation of water is 2.3 × 10⁶ J kg⁻¹. The boiling point of water is 100 °C.

Calculate the mass of water **remaining** in the kettle after 4.0 minutes.
Assume that all the thermal energy from the heater is transferred to the water.

mass of water remaining = kg [4]

Total Marks for Question Set 8: 6

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