6 The variation with time t of the output V of an alternating voltage supply of frequency 50 Hz is shown in Fig. 6.1.

For Examiner's Use

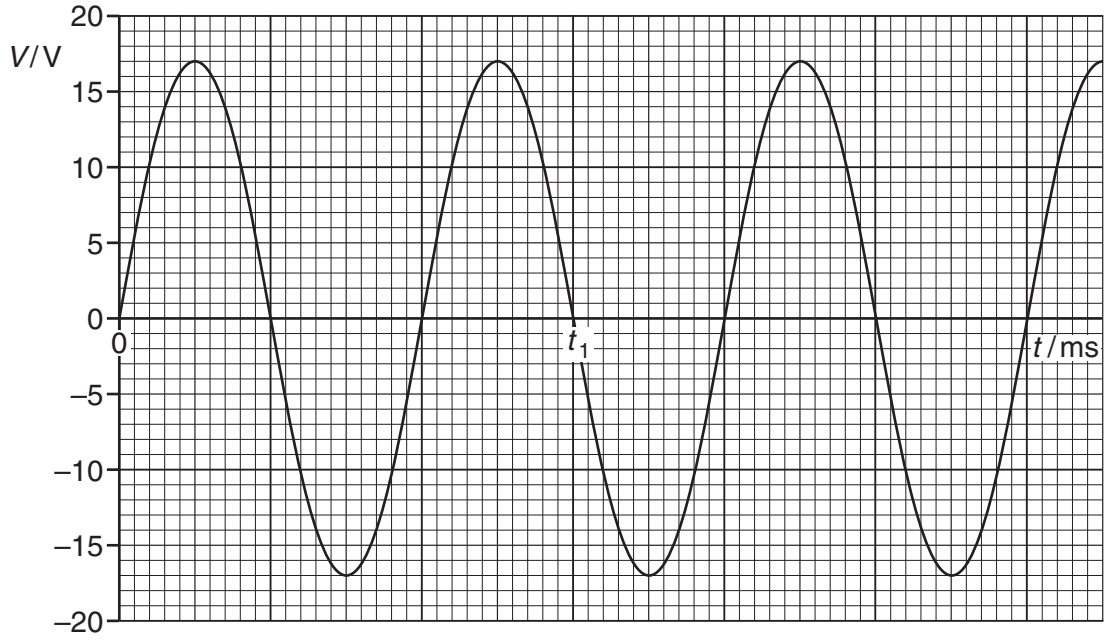

Fig. 6.1

(a) Use Fig. 6.1 to state

(i) the time t_1,

t_1 = ... s [2]

(ii) the peak value V_0 of the voltage,

V_0 = ... V [1]

(iii) the root-mean-square voltage V_{rms},

V_{rms} = ... V [1]

(iv) the mean voltage $<V>$.

$<V>$ = ... V [1]

(b) The alternating supply is connected in series with a resistor of resistance 2.4 Ω. Calculate the mean power dissipated in the resistor.

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power = ... W [2]