

Question number	Answer	Notes	Marks
5 a	attempt to use 25%; scaling up to 1 week; evaluation; e.g. $1.2 \times 10^7 \times 0.25 (= 3.0 \times 10^6)$ (energy =) $3.0 \times 10^6 \times 7$ (energy =) 2.1×10^7 (J)	allow 25% or 0.25 seen anywhere allow x7 seen anywhere final answer of 3.0×10^6 or 8.4×10^7 gains 2 marks	3
b	any one from: MP1. idea of double/triple glazing; MP2. draw curtains; MP3. close windows; MP4. use of reflective film applied to windows;		1
c	any four from: MP1. air is a good insulator / poor conductor; MP2. conduction is reduced; MP3. fibreglass is a good insulator / poor conductor; MP4. (trapped) air cannot move around; MP5. convection (current) cannot form / is reduced;	ignore references to heat being trapped ignore unqualified 'air is trapped' as it is given in question	4
d	correct general shape i.e. one input and two outputs; reasonable correct proportions (by eye); correctly labelled;	allow 'input, waste, useful' or 'chemical, thermal, thermal'	3

Total for question 5 = 11 marks