

task_xymf9jywhsdrrfwi_with_calculation

Student Group

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conversions, energy, consumption, chapter1 1

Exercise E10 Conversion: Energy Consumption

Convert the following values step by step:

Result

How much energy does an average household consume per day when consuming an average power of 500 W ?

How many chocolate bars ($2'000\text{ kJ}$ each) does this correspond to?

$$22\text{ chocolate bars}$$

Solution

$$\begin{aligned} W &= 500\text{ W} \cdot 24\text{ h} = 12'000\text{ Wh} = \\ &= 43'200'000\text{ Ws} = 43'200\text{ kW} &= 43'200\text{ kJ} \quad \text{\text{Or:}} \quad W \\ &= 0.5\text{ kW} \cdot 24\text{ h} = 12\text{ kWh} = 43'200\text{ kW} &= \\ &= 43'200\text{ kJ} \quad n_{\text{bars}} = \frac{43'200\text{ kJ}}{2'000\text{ kJ}} = \\ &= 21.6\text{ chocolate bars} \end{aligned}$$

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