task_xymf9jywhsdrrfwi_with_calculation

Student Group

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Exercise E16 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~{\rm W} $?
How many chocolate bars ($2'000~{\rm kJ}$ each) does this correspond to?
\begin{align*} 22~{\rm chocolate~bars} \end{align*}

Soiution

\begin{align*} W &= 500~{\rm W} \cdot 24~{\rm h} = 12000~{\rm Wh}= 43'200'000~{\rm Ws} = 43'200~{\rm kWs} &&= 43'200~{\rm kJ} \\ \text{Or: } W &= 0.5~{\rm kW} \cdot 24~{\rm h} = 12~{\rm kWh} = 43'200~{\rm kWs} &&= 43'200~{\rm kJ} \\ \\ n_{\rm bars} &={{43'200~{\rm kJ}}\over{2'000~{\rm kJ}}} = 21.6~{\rm chocolate~bars} \\ \end{align*}