

task_239xqp7zjr32bv4a_with_calculation

Student Group

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Exercise E12 Conversions: Speed, Energy, and Power

1. A vehicle speed of $80.00 \frac{\text{km}}{\text{h}}$ in $\frac{\text{m}}{\text{s}}$
 2. The energy of 60.0 kWh in J
 3. The charge of about $1.6 \cdot 10^{-19} \text{ C}$

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Solution
fast
\begin{align*}
80.00 \frac{\text{km}}{\text{h}} &= 80.00 \frac{1000 \text{ m}}{3600 \text{ s}} = 22.22 \frac{\text{m}}{\text{s}} \\
60.0 \text{ kWh} &= 60.0 \text{ kWh} \cdot \frac{3600 \text{ s}}{1 \text{ h}} \cdot \frac{1000 \text{ W}}{1 \text{ kW}} = 2.16 \cdot 10^8 \text{ J} \\
1.6 \cdot 10^{-19} \text{ C} &= 1.6 \cdot 10^{-19} \text{ C} \cdot \frac{1 \text{ A}}{1 \text{ C/s}} = 1.6 \cdot 10^{-19} \text{ A} \cdot \text{s}
\end{align*}
    
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