

# task\_239xqp7zjr32bv4a\_with\_calculation

## Student Group

First Name	Surname	Matrikel Nr.

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## conversions, speed, energy, power, chapter1 1

### Exercise E13 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  $60.0 \text{ kWh}$  in  $\text{J}$
3. The power of  $1.6 \cdot 10^{-19} \text{ C}$  in  $\text{W}$

#### Solution

```

\begin{align*}
v &= 80.00 \frac{\text{km}}{\text{h}} = 80.00 \frac{1000 \text{ m}}{3600 \text{ s}} = 22.22 \frac{\text{m}}{\text{s}} \\
E &= 60.0 \text{ kWh} = 60.0 \cdot 1000 \text{ Wh} = 60.0 \cdot 1000 \cdot 3600 \text{ J} = 2.16 \cdot 10^8 \text{ J} \\
P &= 1.6 \cdot 10^{-19} \text{ C} = 1.6 \cdot 10^{-19} \frac{\text{C}}{\text{s}} = 1.6 \cdot 10^{-19} \frac{\text{C}}{\text{s}} \cdot 1 \text{ W} = 1.6 \cdot 10^{-19} \text{ W}
\end{align*}

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