

task_239xqp7zjr32bv4a_with_calculation

Student Group

First Name	Surname	Matrikel Nr.

Table of Contents

Exercise E2 Conversions: Speed, Energy, and Power	2
---	---

conversions, speed, energy, power, chapter1 1

Exercise E2 Conversions: Speed, Energy, and Power

1. A vehicle speed of $80.00 \frac{\text{km}}{\text{h}}$ in $\frac{\text{m}}{\text{s}}$

```

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}}
\end{align*}
\begin{align*}
1 \text{ kW} &= 1000 \text{ W} = 1000 \frac{\text{J}}{\text{s}} = 1000 \frac{\text{J}}{3600 \text{ s}} = 0.2778 \frac{\text{kJ}}{\text{s}}
\end{align*}
\begin{align*}
0.2778 \frac{\text{kJ}}{\text{s}} &= 0.2778 \frac{\text{kJ}}{3600 \text{ s}} = 0.00007719 \frac{\text{kJ}}{\text{h}} = 0.00007719 \frac{\text{kJ}}{\text{h}}
\end{align*}
\begin{align*}
0.00007719 \frac{\text{kJ}}{\text{h}} &= 0.00007719 \frac{1000 \text{ J}}{3600 \text{ s}} = 2.144 \times 10^{-5} \frac{\text{J}}{\text{s}} = 2.144 \times 10^{-5} \text{ W}
\end{align*}
\begin{align*}
2.144 \times 10^{-5} \text{ W} &= 2.144 \times 10^{-5} \frac{\text{J}}{\text{s}} = 2.144 \times 10^{-5} \frac{\text{J}}{3600 \text{ s}} = 5.956 \times 10^{-9} \frac{\text{J}}{\text{h}}
\end{align*}

```

From: <https://wiki.mexle.org/> - MEXLE Wiki

Permanent link: https://wiki.mexle.org/ee1/task_239xqp7zjr32bv4a_with_calculation

Last update: 2023/04/03 12:38

