

# task\_f64r8g2jf4pdomfi\_with\_calculation

## Student Group

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**Exercise E1 Conversion: Energy, Power and Area**

2. The number of panels and the length of the solar panels for a (defect) car (with a peak power of 100 W) over 100 km? Result

\$1~\text{m}^2\$ in average in December \$0.2~\{\{\text{kWh}\}\over{\{\text{m}^2}\}}\$. The car is driven \$50~\{\text{km}\}\$ per day. The size of a distinct Solar module with \$460~\{\text{Wp}\}\$ (\$W\_{\text{peak}}\$) is \$1.9~\{\text{m}\} \times 1.1~\{\text{m}\}\$.

$$W = 460 \text{ (Wp)} \quad \text{\textbackslash end\{align*\}}$$

.. What is the average power consumption of the car per day?

$$A = 100 \text{ (W)} \quad \text{\textbackslash end\{align*\}}$$

$$\text{solution} \quad \frac{W}{A} = \frac{460 \text{ (Wp)}}{100 \text{ (W)}} = 4.6 \text{ (panels)} \quad \text{\textbackslash end\{align*\}}$$

$$\begin{aligned} \frac{W}{l} &= \frac{16 \text{ (kWh)}}{100 \text{ (km)}} = 0.16 \\ \frac{\sim \text{ (kWh)}}{\sim \text{ (km)}} \quad \& \quad W &= 50 \text{ (km)} \cdot 0.16 \quad \{\sim \text{ (kWh)}\} \over{\sim \text{ (km)}} = 8 \text{ (kWh)} \end{aligned} \quad \text{\textbackslash end\{align*\}}$$

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