
Worksheet tips

Worksheet 1, exercise b)

Tip 1:

The energy emitted by the tritium nucleus is released as kinetic energy of the emitted electron. This energy release leads to a loss of mass for energy conservation reasons (conservation of mass). First calculate how much the total mass of the helium nucleus and electron differs from the tritium nucleus and remember that mass and energy are interlinked using

$$E = m \cdot c^2$$

Tip 2:

$$E_{\text{kin}} = (m_{\text{H}} - (m_{\text{He}} + m_e)) \cdot c^2$$

Tip 3:

Conversion from Joules to electron volts: $1\text{J} = \frac{1}{1.6 \cdot 10^{-19}} \text{eV}$.

Therefore: Divide the joule result by the elementary charge.

Worksheet 2, exercise a)

Tip:

Use the right-hand rule.

Worksheet 2, exercise b) 1.

Tip:

The Lorentz force acts as a circular force i.e. a centripetal force.

The following formula applies: $F_z = F_L$

Worksheet 2, exercise b) 3.

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