

Energy

$$E_{kin} = \frac{1}{2} m \cdot v^2$$

geg $v_{max} = 100 \text{ km/h} = 27,78 \text{ m/s}$
 $m = 1 \text{ (j/kg)}$

gev E_{kin}

opl $E_{kin} = \frac{1}{2} \cdot 1 \cdot \cancel{1} \cdot 27,78^2$
 $= \cancel{1} \text{ j/kg}$
 $385,86 \text{ j/kg}$

Acceleration

$$v_x = a_x \cdot t + v_{x0}$$

geg $v_x = 100 \text{ km/h} = 100 \cdot \frac{1}{3,6} = 27,78 \text{ m/s}$
 $t = 4 \text{ s}$
 $v_{x0} = 0 \text{ km/h}$

gev a_x

opl $v_x = a_x \cdot t \Rightarrow a_x = \frac{v_x}{t}$
 $= \frac{\cancel{100 \text{ km/h}}}{4 \text{ s}} = \frac{27,78 \text{ m/s}}{4 \text{ s}}$
 $= 6,94 \frac{\text{m}}{\text{s}^2}$