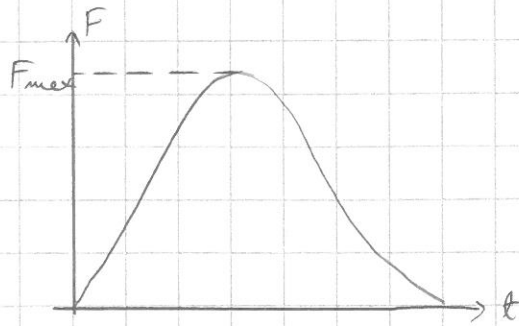


6.12 a)



$\Sigma \vec{F} = m\vec{a}$

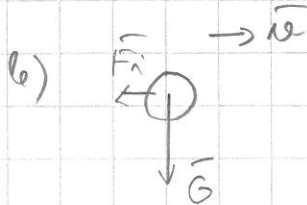
$\Rightarrow a$ on suurin kun F on suurin

$\Rightarrow F_{max} = m a_{max}$

$(\Rightarrow) a_{max} = \frac{F_{max}}{m} = \frac{740N}{0,058kg}$

$\approx 12758,6 \frac{m}{s^2}$

$\approx \underline{13000 \frac{m}{s^2}}$

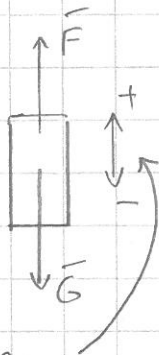


\vec{G} : paino
 \vec{F}_A : ilmanvastus

7. liiketilä

$\Sigma \vec{F} = m\vec{a}$ LIIKKEYHTÄLÖ

7.11



$m = 480kg$

$\Sigma \vec{F} = \vec{F} + \vec{G} = m\vec{a}$ (kestotilä)
 $\Rightarrow F - G = F - mg = ma$ (kiihtymätilä)
 $\Rightarrow F = mg + ma$

merkkisääntö

$t = 0s \dots 4s : a = \frac{\Delta v}{\Delta t} = \frac{15 \frac{m}{s} - 0 \frac{m}{s}}{4s - 0s} = 0,375 \frac{m}{s^2}$

$F = mg + ma = 480kg (9,81 \frac{m}{s^2} + 0,375 \frac{m}{s^2}) = 4888,8N$
 $\approx \underline{4,9kN}$

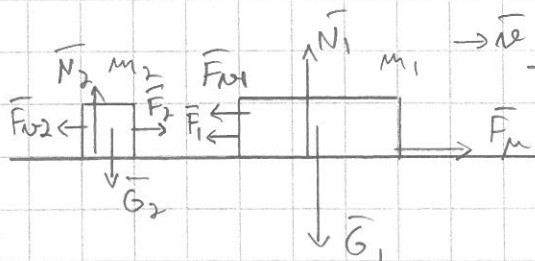
$t = 4s \dots 10s : a = 0 \frac{m}{s^2}$ (u vesä)

$F = mg = 480kg \cdot 9,81 \frac{m}{s^2} = 4708,8N \approx \underline{4,7kN}$

$t = 10s \dots 12s : a = \frac{\Delta v}{\Delta t} = \frac{0 \frac{m}{s} - 15 \frac{m}{s}}{12s - 10s} = -0,75 \frac{m}{s^2}$

$F = mg + ma = 480kg (9,81 \frac{m}{s^2} - 0,75 \frac{m}{s^2}) = 4348,8N$
 $\approx \underline{4,3kN}$

7.13



$m_1 = 1760kg$

$m_2 = 440kg$

$F_m = 4,32N$

$F_N = 0,252N$

$a = 1,4 \frac{m}{s^2}$

$\vec{F}_1 = -\vec{F}_2$ (N III)

$\Sigma \vec{F} = m\vec{a}$ koko systeemin