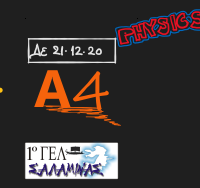


$\Delta x = 1800 - 1900 = -100$
 $\Delta v = 0$
 $\Delta t = 10$
 $a = \frac{\Delta v}{\Delta t} = 0$
 $\Delta x = v_0 \Delta t + \frac{1}{2} a \Delta t^2$
 $-100 = 0 + \frac{1}{2} a (10)^2$
 $-100 = 50a$
 $a = -2 \text{ m/s}^2$



Ασκηση
 $x = 10t + 3t^2$
 $\Sigma F = 20 \text{ N}$
 $u = ?$
 $v(t) = ?$

$x = 10t + 3t^2 \Rightarrow v_0 = 10 \text{ m/s}$
 $x = v_0 t + \frac{1}{2} a t^2 \Rightarrow \frac{1}{2} a = 3 \Rightarrow a = 6 \text{ m/s}^2$

$\Sigma F = m \cdot a \Rightarrow 20 = m \cdot 6 \Rightarrow m = \frac{20}{6} = \frac{10}{3} = 3,33 \text{ kg}$

$v = v_0 + at \Rightarrow v = 10 + 6t$

5.5

$\Sigma F = m \cdot a$
 $F = m \cdot a$

$\Sigma F' = m \cdot a'$
 $F + F' = m \cdot a'$
 $F + 2F = m \cdot a'$
 $3F = m \cdot a'$

$3m \cdot a = m \cdot a' \Rightarrow a' = 3a \Rightarrow \text{Γ.}$

Ασκηση
 $x = 20t - 4t^2$
 $F_1 = 20 \text{ N}$
 $u = 2 \text{ m/s}$
 $F_2 = ?$

$x = 20t - 4t^2 \Rightarrow v_0 = 20 \text{ m/s}$
 $x = v_0 t - \frac{1}{2} a t^2 \Rightarrow \frac{1}{2} a = 4 \Rightarrow a = 8 \text{ m/s}^2$ (επιταχύνει)

$\Sigma F = m \cdot a \Rightarrow F_1 - F_2 = m \cdot a$
 $F_2 - F_1 = m \cdot a \Rightarrow F_2 - 20 = 2 \cdot 8 \Rightarrow F_2 - 20 = 16 \Rightarrow F_2 = 20 + 16 = 36 \text{ N}$

tip: Βρίσκουμε τον χρόνο που είναι 11 m/s
 20 m/s (αν είναι επιταχύνει)
 11 m/s (αν είναι επιβραδύνει)

5.6

A. $F_1 = F_2$
 B. $F_1 = 2F_2$
 Γ. $F_1 = F_2 / 2$

$\otimes u_2 = 2u_1 \Rightarrow u_1 = \frac{u_2}{2}$

5.6

$\Sigma \omega \cdot u_1: \alpha_1 = \frac{\Delta v}{\Delta t} = \frac{2v_1 - 0}{t_1 - 0} = \frac{2v_1}{t_1} = 2 \cdot \alpha_2 \Rightarrow \alpha_1 = 2 \cdot \alpha_2$

$\Sigma \omega \cdot u_2: \alpha_2 = \frac{\Delta v}{\Delta t} = \frac{v_1 - 0}{t_1 - 0} = \frac{v_1}{t_1}$

$\Sigma \omega \cdot u_1: F_1 = m_1 \cdot a_1 = \frac{m_2}{2} \cdot 2 \cdot \alpha_2 = m_2 \cdot \alpha_2 = F_2 \Rightarrow \text{A.}$

$\Sigma \omega \cdot u_2: F_2 = m_2 \cdot \alpha_2$