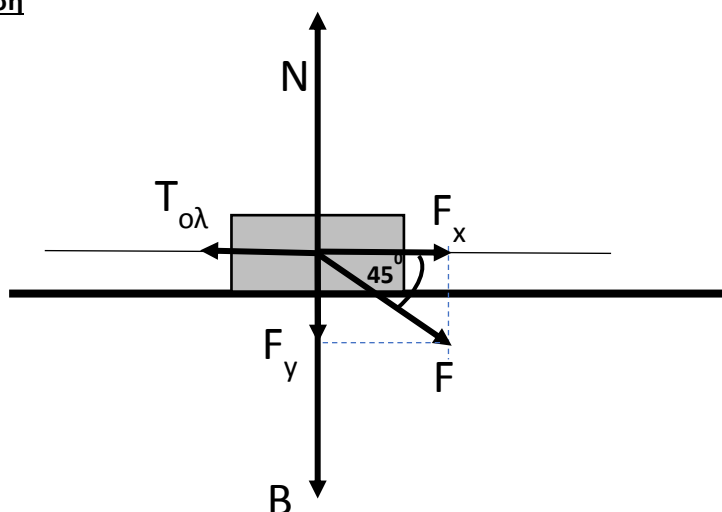


Ενδεικτική λύση

4.1



(Μονάδες 5)

4.2

$$T_{ολ} = \mu \cdot N$$

$$\Sigma F_y = 0 \Rightarrow N - F_y - B = 0 \Rightarrow N = F \cdot \eta\mu 45^\circ + m \cdot g \Rightarrow$$

$$N = 20 \text{ N} \cdot 0,7 + 2 \text{ Kg} \cdot 10 \text{ m/s}^2 \Rightarrow$$

$$N = 34 \text{ N (1)}$$

(Μονάδες 5)

$$T_{ολ} = \mu \cdot N \stackrel{(1)}{\Rightarrow} T_{ολ} = 0,2 \cdot 34 \text{ N} \Rightarrow T_{ολ} = 6,8 \text{ N}$$

(Μονάδες 3)

4.3

$$\Sigma F_x = m \cdot a \Rightarrow F_x - T_{ολ} = m \cdot a \Rightarrow F \cdot \sigma\upsilon\nu 45^\circ - T_{ολ} = m \cdot a \Rightarrow$$

$$20 \text{ N} \cdot 0,7 - 6,8 \text{ N} = 2 \text{ Kg} \cdot a \Rightarrow a = 3,6 \text{ m/s}^2$$

(Μονάδες 3)

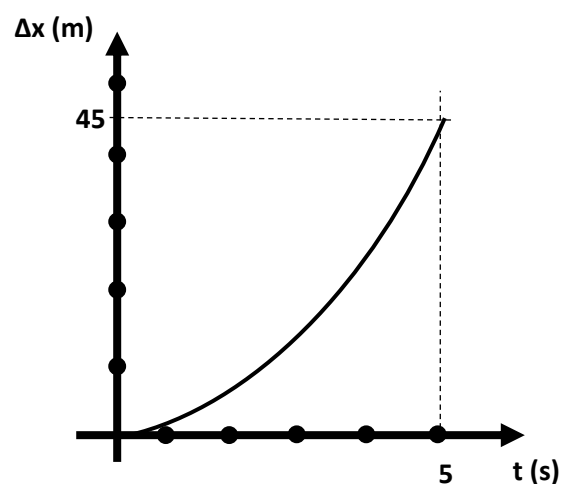
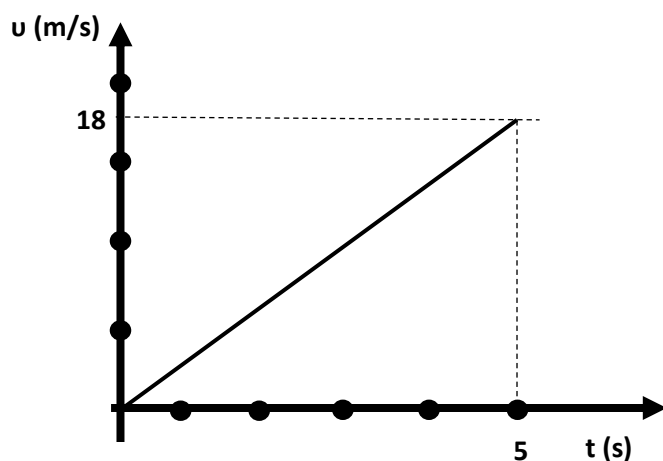
$$v = a \cdot \Delta t \Rightarrow v = 3,6 \text{ m/s}^2 \cdot 5 \text{ s} \Rightarrow v = 18 \text{ m/s}$$

(Μονάδες 2)

$$\Delta x = \frac{1}{2} a \cdot (\Delta t)^2 \Rightarrow \Delta x = \frac{1}{2} 3,6 \text{ m/s}^2 \cdot (5 \text{ s})^2 \Rightarrow \Delta x = 45 \text{ m}$$

(Μονάδες 3)

4.4



(Μονάδες 4)