

Θεμα 1^ο

1-8, 2-5, 3-8.

Θεμα 2^ο

1) A-2, B-1, Γ-5, Δ-3.

2) α-Γ, β-A, γ-B.

Θεμα 3^ο

$$α) a_1 = \frac{\Delta v}{\Delta t} = \frac{12}{4} = 3 \text{ m/s}^2.$$

$$a_2 = \frac{\Delta v}{\Delta t} = \frac{-20}{4} = -5 \text{ m/s}^2.$$

$$β) \Delta x = \text{εμβαδόν τραπεζίου} = \frac{20+8}{2} \cdot 4 = 56 \text{ m}.$$

$$γ) v = v_0 + a \cdot t \Rightarrow 11 = 8 + 3t \Rightarrow 3t = 3 \Rightarrow t = 1 \text{ s}.$$

Θεμα 4^ο

$$α) W_F = F \cdot x = 80 \cdot 6 = 480 \text{ J}.$$

$$W_T = -T \cdot x = -30 \cdot 6 = -180 \text{ J}.$$

$$β) a = \frac{\Sigma F}{m} = \frac{80-30}{6} = \frac{50}{6} = \frac{25}{3} \text{ m/s}^2.$$

$$γ) \Delta K = W_{ολ} \Rightarrow K_{τελ} - K_{αρχ} = W_F + W_T \Rightarrow K = 480 - 180 \Rightarrow K = 300 \text{ J}.$$