

$$E_i = E_f$$

$$u_i + K_i = u_f + K_f$$

$$mgh_i = mgh_f + \frac{1}{2} m v_f^2$$

$$1 \times 10 = 1 \times 1.2 + \frac{1}{2} v^2$$

$$10 = 1.2 + \frac{1}{2} v^2 \rightarrow v^2 = 17.6 \rightarrow v = 4.2 \text{ m/s}$$

$$W = mgh = 1.2 \times 10 \times (10 - 1.2) = 1.2 \times 10 \times 8.8 = 10.56 \text{ J}$$

$$V = f \cdot \lambda \cdot \text{cm}^3$$

$$\theta_i = 1.0$$

$$\theta_r = 1.0$$

$$\Delta V = V_i \times \theta_i \cdot \Delta \theta = 1.0 \times 1.0 \times 1.0 = 1.0 \text{ cm}^3$$

$$\Delta V_r = V_r \cdot \Delta \theta = 1.0 \times 1.0 = 1.0 \text{ cm}^3$$

$$\text{حجم تغییرات} = 1.0 - 1.0 = 0 \text{ cm}^3$$

الف - ثابت - افرایش - ثابت - کاهش - ثابت

$$V_A = V_E < V_C$$

$$P_G = P_0 + \rho gh \rightarrow P_G = 1.0 + 1.0 = 2.0 \text{ cmHg}$$

$$m_1 = 1.0 \text{ gr}$$

$$m_2 = 1.0 \text{ gr}$$

$$\theta_r = 1.0$$

$$\theta_e = 1.0$$

$$\theta_i = ?$$

$$Q_1 + Q_2 = 0$$

$$m_1 c_1 \Delta \theta_1 + m_2 c_2 \Delta \theta_2 = 0$$

$$1 \times 1.0 \times (1.0 - \theta_i) + 1 \times 1.0 \times (1.0 - 1.0) = 0 \rightarrow \theta_i = 1.0$$

$$P = \rho \cdot w$$

$$m = 1.0 \text{ gr}$$

$$t = 1 \text{ min}$$

$$\theta_i = 1.0$$

$$\theta_r = 1.0$$

$$Q = P \cdot t = 1.0 \times 1.0 = 1.0$$

$$Q_1 + Q_2 = m_1 c_1 \Delta \theta_1 + m_2 c_2 \Delta \theta_2 = 1.0$$

$$(1.0 \times 1.0 \times 1.0) + 1.0 \times 1.0 = 1.0$$

$$C = 1.0$$

$$P_A = P_B = P_C$$