

Tugas Fisika

Suhu & kalor

Nama : Kiven namiony Mulyaningsih
Kelas : XI mipa 4

$$1. 38x - (-10x) / 110x - (-10x) = x - 0^\circ\text{C} / 100^\circ\text{C} - 0^\circ\text{C}$$

$$48x / 120x = x / 100$$

$$120x = 48 \cdot 100$$

$$120x = 4800$$

$$x = 4800 : 120$$

$$x = \underline{\underline{40^\circ\text{C}}}$$

$$2. Q_1 = Q_2$$

$$m \cdot c \cdot \Delta t = m \cdot c \cdot \Delta t$$

karena c sama jadi dicoret

$$75 \cdot (t_x - 0) = 50 \cdot (100 - t_x)$$

$$75t_x = 5000 - 50t_x$$

$$75t_x + 50t_x = 5000$$

$$125t_x = 5000$$

$$t_x = \underline{\underline{40^\circ}}$$

$$4. PV = nRT$$

$$P_1V_1/T_1 = P_2V_2/T_2$$

$$= 2P_2V_2/4T_2$$

$$V_1 = 2V_2/4$$

$$= 1/2 V_2$$

$$= 1/2 V_2 \text{ atau } 2V_1 = V_2$$

$$3. \text{Dik} = A_0 = (200 \times 100) \text{ cm} \\ \beta = \text{koefisien muai luas} \\ = 1,8 \times (10^{-6}) / ^\circ\text{C} \\ \Delta T = 80^\circ\text{C}$$

$$\text{Dit} = \Delta A ?$$

Jawab :

$$\Delta A = A_0 \cdot \beta \cdot \Delta T$$

$$\Delta A = (2 \text{ m} \cdot 1 \text{ m}) \times (1,8 \times (10^{-6}) / ^\circ\text{C}) \\ \times 80^\circ\text{C}$$

$$\Delta A = 2 \text{ m}^2 \times 0,000018 \times 80$$

$$= 2 \text{ m}^2 \times 0,00144 \times 8$$

$$= 2 \text{ m}^2 \times 0,01152$$

$$= 0,02304 \text{ m}^2$$

$$5. A_a = A_b$$

$$L_a = L_b$$

$$k_a = 2 k_b$$

$$t_a = 210^\circ\text{C}$$

$$t_b = 30^\circ\text{C}$$

$$H_a = H_b$$

$$k_a \cdot A_a \cdot \Delta t_a / L_a = k_b \cdot A_b \cdot \Delta t_b / L_b$$

$$= k_a \Delta t_a = k_b \Delta t_b$$

$$2k_b(210 - T) = k_b(t - 30)$$

$$2(210 - T) = (t - 30)$$

$$420 - 2t = t - 30$$

$$450 = 3t$$

$$t = \underline{\underline{150^\circ\text{C}}}$$