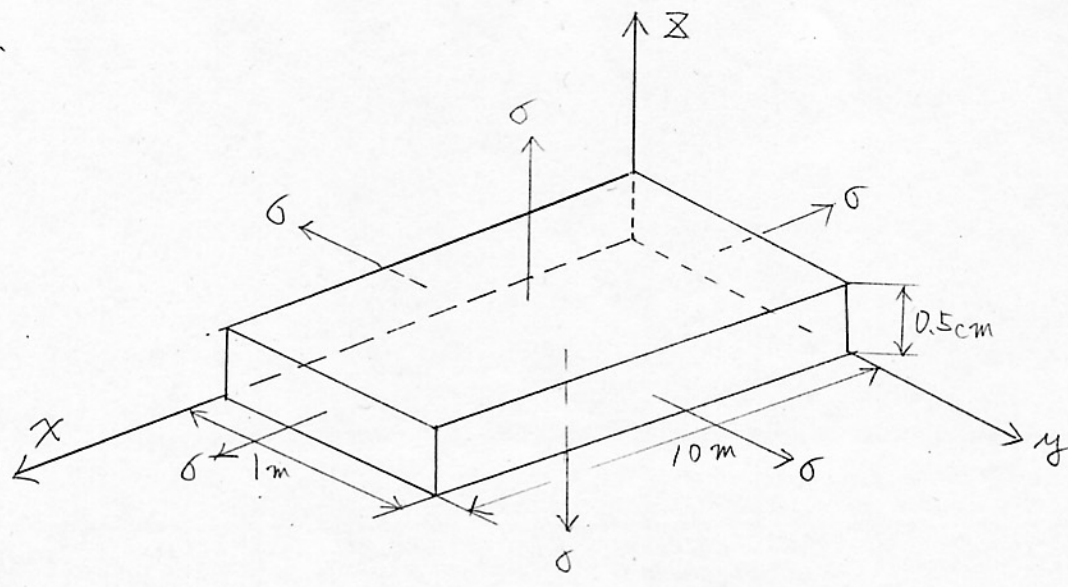


26.



$$\epsilon_x = \frac{1}{E} \{ \sigma_x - \nu (\sigma_y + \sigma_z) \}$$

$$\epsilon_y = \frac{1}{E} \{ \sigma_y - \nu (\sigma_x + \sigma_z) \}$$

$$\epsilon_z = \frac{1}{E} \{ \sigma_z - \nu (\sigma_x + \sigma_y) \}$$

$$\sigma_x = \sigma_y = \sigma_z = 0.1013 \text{ MPa } \pm 1)$$

○ 鋼

$$\epsilon_x = \frac{1}{69 \times 10^3} \{ 0.1013 - 0.33(0.1013 + 0.1013) \}$$

$$= 4.99 \times 10^{-7}$$

$$\epsilon_x = \epsilon_y = \epsilon_z = 4.99 \times 10^{-7}$$

$$\frac{\Delta l}{l} = \epsilon \quad \pm 1)$$

$$\frac{\Delta l}{10} = 4.99 \times 10^{-7} \quad \underline{\Delta l = 4.99 \mu\text{m}} // \quad 14.97 \times 10^{-7}$$

$$\Delta V = (\epsilon_x + \epsilon_y + \epsilon_z) = (10 \times 0.5 \times 10^{-3} \times 1) \times 14.97 \times 10^{-7}$$

$$= \underline{99.85 \times 10^{-9} \text{ m}^3} //$$

○ 鉄

$$\epsilon_x = \frac{1}{196 \times 10^3} \{ 0.1013 - 0.29(0.1013 + 0.1013) \}$$

$$= 2.17 \times 10^{-7}$$

$$\epsilon_x = \epsilon_y = \epsilon_z = 2.17 \times 10^{-7}$$

$$\frac{\Delta l}{10} = 2.17 \times 10^{-7} \quad \underline{\Delta l = 2.17 \mu\text{m}} // \quad 6.51 \times 10^{-7}$$

$$\Delta V = (\epsilon_x + \epsilon_y + \epsilon_z) = (10 \times 0.5 \times 10^{-3} \times 1) \times 6.51 \times 10^{-7}$$

$$= \underline{32.55 \times 10^{-9} \text{ m}^3} //$$