



$$\text{جیوه: } V_1 = V_0(1 + 1.8 \times 10^{-4} \times 20) \rightarrow \frac{1}{V_1}(1 + 1.8 \times 10^{-4} \times 20) = \frac{1}{V_0}$$

$$\rightarrow \frac{m}{V_1}(1 + 1.8 \times 10^{-4} \times 20) = \frac{m}{V_0} \rightarrow \rho_1(1 + 1.8 \times 10^{-4} \times 20) = \rho_0$$

$$\text{ظرف: } V_1 = V_0(1 + \beta \times 20) \rightarrow \frac{99.7}{\rho_1} = \frac{100}{\rho_0}(1 + \beta \times 20)$$

$$\rightarrow 99.7 \times (1 + 1.8 \times 10^{-4} \times 20) = 100 \times (1 + \beta \times 20)$$

$$\rightarrow \frac{99.7 \times (1 + 1.8 \times 10^{-4} \times 20)}{100} - 1 = \beta \times 20$$

$$\beta = 2.946 \times 10^{-5} \rightarrow \alpha = \frac{\beta}{3} = 9.82 \times 10^{-6}$$