Answer on Question#36969 – Physics - Mechanics

A surface tension of water $\sigma = 70 * 10^{-3} \frac{N}{m}$.

Pressure inside a bubble when it is at depth h below an water surface is

$$P = \rho_w g h + \frac{2\sigma}{R},$$

where ρ_w – density of water.

The pressure inside an air bubble of radius 2 cm formed 20 cm below water surface is

$$P = 10^3 \frac{kg}{m^3} * 9.81 \frac{m}{s^2} * 20 * 10^{-2} m + \frac{2 * 70 * 10^{-3} \frac{N}{m}}{2 * 10^{-2} m} = 1969 \frac{N}{m^2}.$$

Answer: $\mathbf{1969 \frac{N}{m^2}}$.