Answer on Question # 83942, Physics / Mechanics

Question 1. *A body weighs $P_1 = 50\,g$ in air and $P_2 = 40\,g$ in water. Density of the body is $\rho =$*

Solution. $P_1 = mg = \rho V g$ and $P_2 = mg - \rho_{water} gV = \rho V g - \rho_{water} gV = gV(\rho - \rho_{water})$. So, $P_2/P_1 = (\rho - \rho_{water})/\rho$ and $\rho = \rho_{water}/(1 - P_2/P_1) = 1000/(1 - 40/50) = 5000\,kg/m^3$. $\square$