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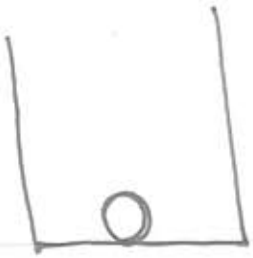

$r = 2\,cm$

$\rho = 1.03 \frac{g}{cm^3}$

$B + N = W$

$\rho_{milk} V_{ball} g + 9.48 \times 10^{-2} = \rho_{glass} V_{ball} g$

$V_{ball} = \frac{4\pi}{3} r^3 = \frac{4\pi}{3} (.02)^3 = .00003351\ m^3$

$\rho_{milk} = 1030 \frac{kg}{m^3}$ $\quad 1.03 \frac{g}{cm^3} \times \frac{kg}{1000g} \times \left(\frac{100cm}{m}\right)^3$

$(1030)(.00003351)(9.8) + 9.48 \times 10^{-2} = \rho_{glass} (.00003351)(9.8)$

$.3382 + .0948 = \rho_{glass} (.000328)$

$1320 \frac{kg}{m^3} = \rho_{glass}$

$M_{ball} = \rho_{glass} V = (1320)(.00003351)$

$= .0442\ kg$