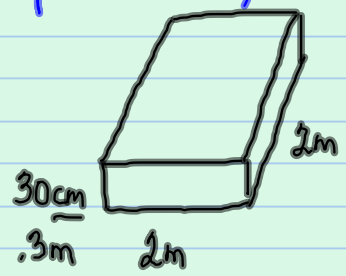
Ex 9.3 p264 #14,15



rect. solid = ℓwh

know

water $\rho = 1000 \frac{kg}{m^3}$

weight = ? $\rightarrow F_g = mg = ? = 1200(9.8) = \boxed{11800\ N}$

$\rho = \frac{m}{V}$ $\quad V = \ell wh = 2(2)(.3) = 1.2 m^3$

$m = \rho V = 1000\ (1.2) = 1200 kg$

#14 $P = 2 \times 10^5 Pa$ $\quad A = 0.024\ m^2$

wt = ? F_g

① $F = ?$

② x4

ans 19200N

15. $V = 100\ cm^3 \left| \frac{1^3\ m^3}{100^3\ cm^3} \right. = \quad m^3$

$m = 133 g \rightarrow kg$

ρ in $\frac{kg}{m^3}$

1330 $\frac{kg}{m^3}$

stress $P = \frac{F}{A}$ pressure (for stress)

$Pa = \frac{N}{m^2}$ units

Length'

$E = \frac{\text{stress}}{\text{strain}} = \frac{\frac{F}{A}}{\frac{\Delta L}{L_0}} = \frac{F \cdot L_0}{A \cdot \Delta L}$

or Y

strain $= \frac{\Delta L}{L_0}$ unit $\frac{m}{m}$

Volume

$B = \frac{F V_0}{A \cdot \Delta V}$

density

$\rho = \frac{m}{V}$ $\frac{kg}{m^3}$

greek rho