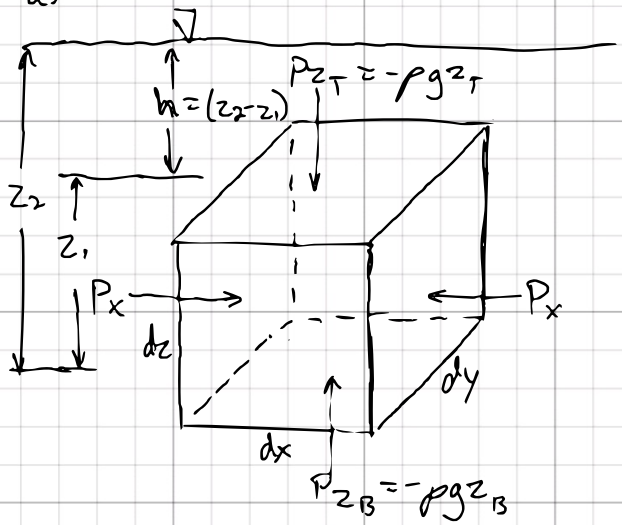
a)



$dP/dz = -\rho g$

$\int dP = \int -\rho g \, dz$

$P = -\rho g z \Big|_{z_1}^{z_2}$

$= -\rho g (z_2 - z_1)$

$\boxed{P = -\rho g h}$

b) $P_x = P_x = P_y = P_y$ $P_{z_T} < P_{z_B}$ $\therefore \Delta F = F_B$ exists

$F_T = \rho g z_T dx dy$, $F_b = \rho g z_b dx dy$,

$\Delta F_{B-T} = F_B = \rho g dx dy (z_B - z_T) = \rho g dx dy dz = \boxed{\rho V g = F_B}$