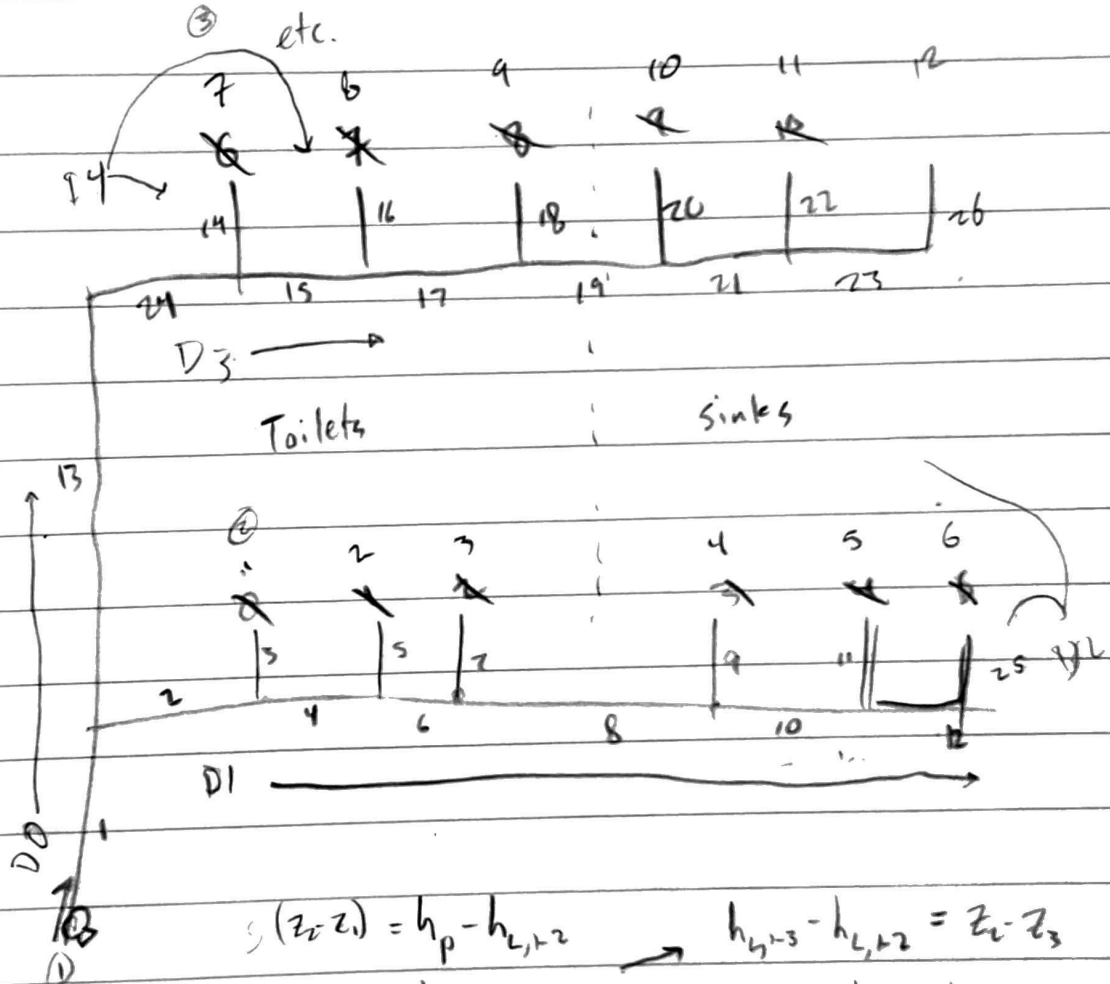
$h_{L,5-4} = h_{L,5-1-2}$

$\frac{\Delta P}{\rho} + \frac{1}{2}\Delta(\alpha v^2) + g\Delta z = -e_{loss}$ $\quad \frac{\Delta P}{\rho g} + \frac{1}{2g}\Delta(\alpha v^2) + \Delta z = -h_{loss}$

$\frac{P_2 - P_1}{\rho g} + \frac{1}{2g}\Delta(\alpha_2 v_2^2 - \alpha_1 v_1^2) + z_2 - z_1 = +h_{loss}$

$= \frac{P_3 - P_1}{\rho g} + \frac{1}{2g}\Delta(\alpha_3 v_3^2 - \alpha_1 v_1^2) + z_3 - z_1 = h_{loss}$

$\frac{P_2 - P_3}{\rho g} + \frac{1}{2g}\Delta(\alpha_2 v_2^2 - \alpha_3 v_3^2) + z_2 - z_3 = 0$ wow very helpful



$(z_2 - z_1) = h_p - h_{L,1-2}$ $\rightarrow$ $h_{L,1-3} - h_{L,1-2} = z_2 - z_3$

$z_3 - z_1 = h_p - h_{L,1-3}$ $\quad z_3 - z_2 = h_{L,1-2} - h_{L,1-3}$

$2h_p - h_{L,1-3} - h_{L,1-2} = z_2 + z_3 - 2z_1$ $\quad 2h_p = (z_2 - z_1) + (z_3 - z_1) + h_{L,1-3}$