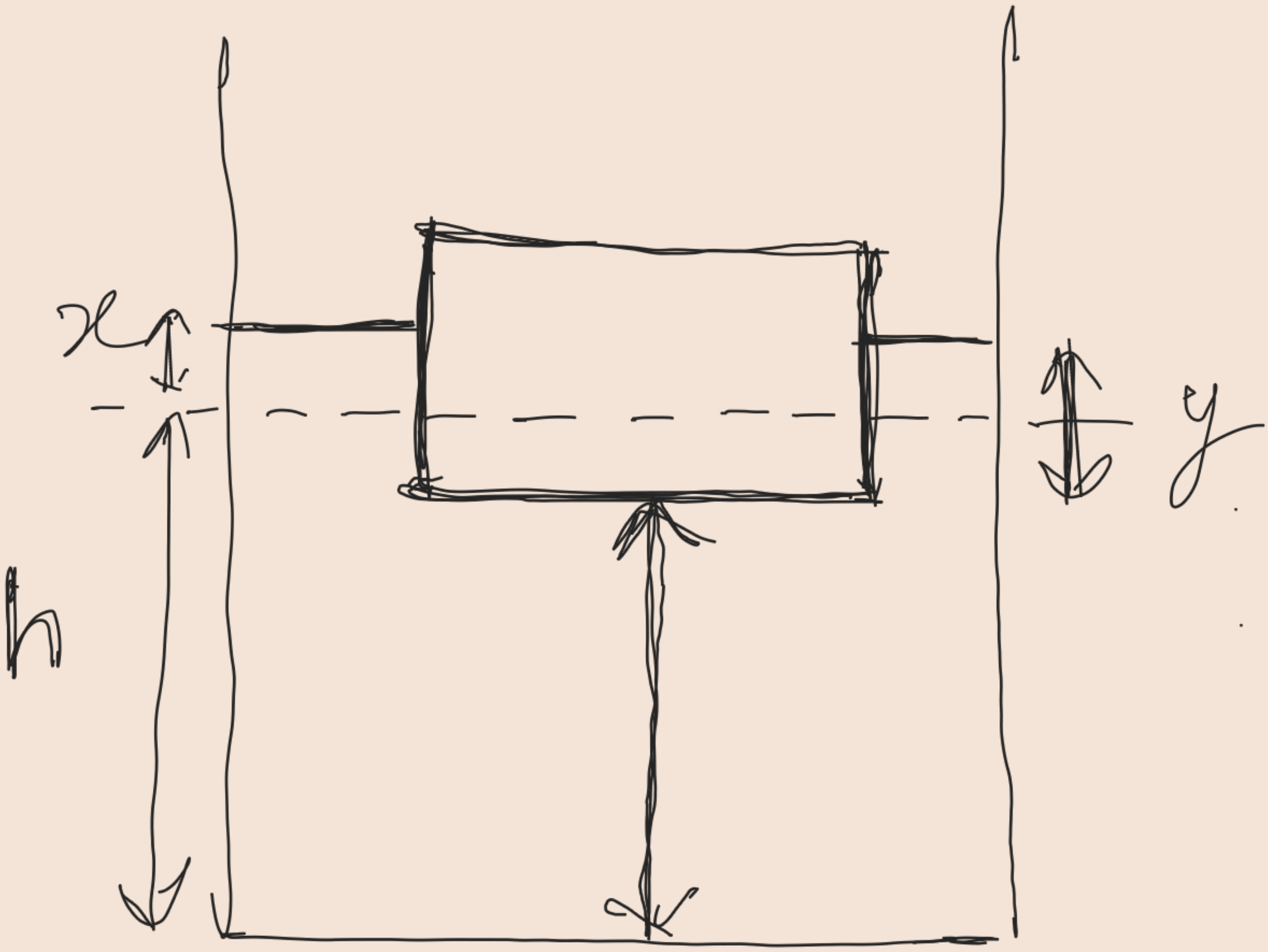


$y = (t)\left(\frac{\rho}{\rho_w}\right)$. Also,

$$(r^2)(y-x) = (R^2-r^2)x$$

$x = \left(\frac{r^2}{R^2}\right)y$. Ht of base of first disc from bottom of cylinder is

$$h + x - y = h + \left(\frac{r^2}{R^2} - 1\right)y$$

$$= h + \left(\frac{r^2 - R^2}{R^2}\right)(t)\left(\frac{\rho}{\rho_w}\right).$$

Now let us put another disc. We can repeat the entire process, where $y$ will be $(n t)\dfrac{\rho}{\rho_w}$.

So, the required condition of question will be

$$h - \left(\frac{R^2 - r^2}{R^2}\right)(n\,t)\frac{\rho}{\rho_w}$$

must become zero.

If there is perfect integer 'n' for the expression $\dfrac{h R^2 \rho_w}{t(R^2 - r^2)\rho}$,

then that will be the answer. If this is some integer + fraction, answer will be next higher integer,