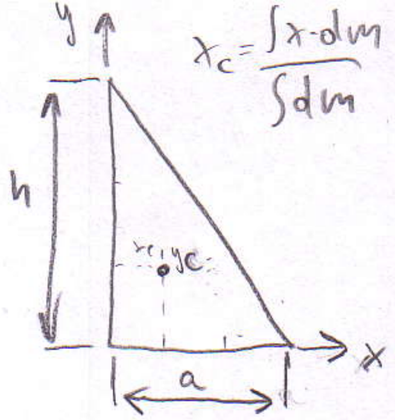


$x_c = \frac{\int x \cdot dm}{\int dm}$ $\qquad y_c = \frac{\int y \cdot dm}{\int dm}$ $\qquad dm = \rho \cdot dA$ $\qquad \rho = 1\,[kg/m^2]$

$dA = dx \cdot dy$

$y_c = \frac{①}{②}$ $\qquad A = \frac{1}{2} \cdot a \cdot h$

$y = -\frac{h}{a} \cdot x + h$

$$② = \int dm = \int \rho \cdot dA = \rho \cdot \int_0^{A_*} dA = \rho \cdot A$$

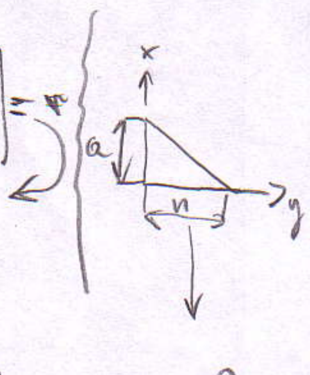
$$① = \int y \cdot dm = \int y \cdot \rho \cdot dA = \iint y \cdot \rho \cdot dx \cdot dy = \rho \cdot \iint y \cdot dx \cdot dy =$$

$$= \rho \int_0^a \cdot \int_0^{-\frac{h}{a} \cdot x + h} y \cdot dx \cdot dy = \rho \int_0^a dx \cdot \frac{y^2}{2} \Big|_0^{-\frac{h}{a} \cdot x + h} = \rho \int_0^a \frac{1}{2} \cdot \left(\frac{h}{a} \cdot x + h\right)^2 \cdot dx =$$

$$= \rho \cdot \frac{1}{2} \cdot \int_0^a \left(-\frac{h}{a} \cdot x + h\right)^2 \cdot dx = \left| \begin{array}{l} -\frac{h}{a} \cdot x + h = q \\ -\frac{h}{a} \cdot dx = dq \\ dx = -\frac{a}{h} \cdot dq \end{array} \right| = \left| \begin{array}{l} a_{*1} = -\frac{h}{a} \cdot (x=0) + h \\ a_{*1} = h \\ a_{*2} = -\frac{h}{a} \cdot (x=a) + h \\ a_{*2} = -h + h = 0 \end{array} \right|$$

$$= \rho \cdot \frac{1}{2} \int_{a_{*1}}^{a_{*2}} (q)^2 \cdot \left(-\frac{a}{h}\right) dq = \rho \cdot \left(-\frac{a}{h}\right) \cdot \frac{1}{2} \cdot \int_{a_{*1}}^{a_{*2}} q^2 \cdot dq =$$

$$= \rho \cdot \left(-\frac{a}{h}\right) \cdot \frac{1}{2} \cdot \frac{q^3}{3} \Big|_{a_{*1} = h}^{a_{*2} = 0} = \rho \cdot \left(-\frac{a}{h}\right) \cdot \frac{1}{2} \cdot \left[\frac{0^3}{3} - \frac{h^3}{3}\right] =$$



$$= \rho \cdot (-1) \cdot \frac{a}{h} \cdot \frac{1}{2} \cdot (-1) \cdot \frac{h^3}{3} = \rho \cdot a \cdot \frac{h^2}{6} = ①$$

$$y_c = \frac{\int y \cdot dm}{\int dm} = \frac{①}{②} = \frac{\rho \cdot a \cdot \frac{h^2}{6}}{\rho \cdot \frac{a \cdot h}{2}} = \frac{h}{6} \cdot 2 = \frac{h}{3}$$

$\boxed{y_c = \frac{h}{3}}$ $\qquad \boxed{x_c = \frac{a}{3}}$