

Onpreghence ystampa mametna

$$x_c = \frac{\sum A_i x_i}{\sum A_i} = \frac{A_1 x_1 + A_2 x_2 + A_3 x_3}{A_1 + A_2 + A_3} =$$

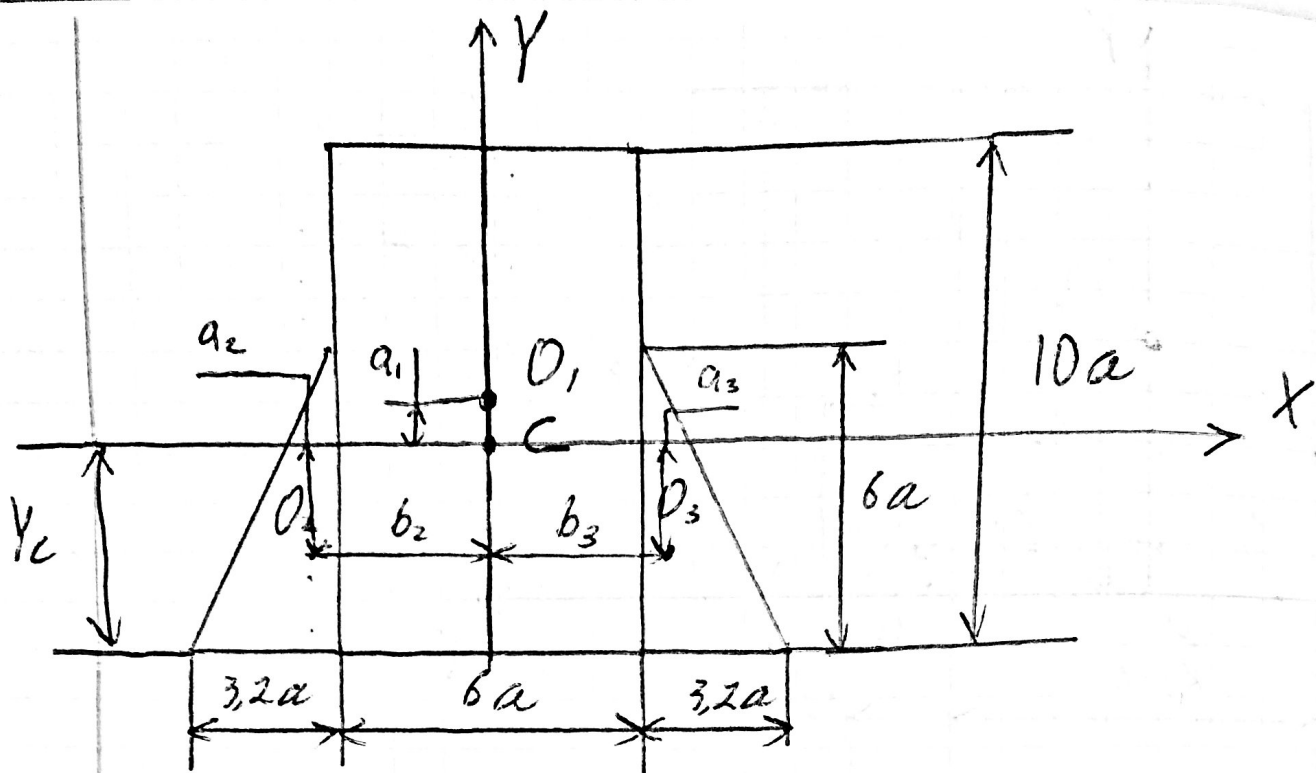
$$= \frac{0 + A_2 x_2 + A_2 (-x_2)}{A_1 + 2A_2} = 0$$

$$y_c = \frac{\sum A_i y_i}{\sum A_i} = \frac{A_1 y_1 + A_2 y_2 + A_3 y_3}{A_1 + A_2 + A_3} =$$

$$= \frac{A_1 y_1 + A_2 y_2 + A_2 (-y_2)}{A_1 + 2A_2} = \frac{A_1 y_1}{A_1 + 2A_2}$$

$$A_1 = 10a \cdot 6a = 60a^2$$

$$y_1 = \frac{10a}{2} = 5a$$



$$y_c \quad A_2 = A_3 = \frac{6a \cdot 3,2a}{2} = 9,4a^2$$

$$y_c = \frac{60a^2 \cdot 5a}{60a^2 + 9,4a^2} = 4,32a$$

Определим центральные моменты инерции

$$J_{x_1} = \frac{bh^3}{12} = \frac{6a \cdot (10a)^3}{12} = 500a^4$$

$$J_{y_1} = \frac{hb^3}{12} = \frac{10a \cdot (6a)^3}{12} = 180a^4$$

$$a_1 = \frac{10a}{2} - 4,32a = 1,32a$$

$$a_2 = a_3 = 4,32a - \frac{1}{3} \cdot 6a = 2,32a$$

$$b_2 = b_3 = \frac{6a}{2} + \frac{1}{3} \cdot 3,2a = 4,07a$$

$$J_{x2} = J_{x3} = \frac{bh^3}{36} = \frac{3,2a \cdot (6a)^3}{36} = 19,2a^4$$

$$J_{y2} = J_{y3} = \frac{hb^3}{36} = \frac{6a \cdot (3,2a)^3}{36} = 5,46a^4$$

$$J_x = J_x' + J_x'' + J_x''' = (J_{x_1} + a_1^2 \Delta_1) + (J_{x_2} + a_2^2 \Delta_2) + (J_{x_3} + a_3^2 \Delta_3) = (J_{x_1} + a_1^2 \Delta_1) + 2(J_{x_2} + a_2^2 \Delta_2) =$$

$$(\cancel{500}a^4 + (1,32a)^2 \cdot 60a^2) + 2(19,2a^4 + (2,32a)^2 \cdot 9,4a^2) =$$

$$= \underline{\underline{7'44,13 a^4}}$$

$$J_y = J_y' + J_y'' + J_y''' = J_{y_1} + (J_{y_2} + b_2^2 \Delta_2) +$$

$$+ (J_{y_3} + b_3^2 \Delta_3) = J_{y_1} + 2(J_{y_2} + b_2^2 \Delta_2) =$$

$$= 180a^4 + 2(5,46a + (4,07a)^2 \cdot 9,4a) = \underline{\underline{502,34a^4}}$$