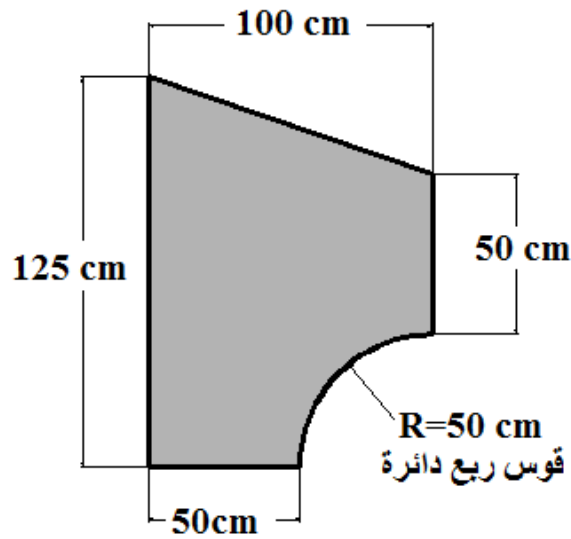


يطلب ايجاد مراكز الثقل للمقطع المستوي التالي وخصائصه الهندسية:



 $I_x = \frac{bh^3}{12}$ $I_y = \frac{b^3h}{12}$ $I_{xy} = 0$ $I_x = \frac{bh^3}{3}$ $I_y = \frac{b^3h}{3}$ $I_{xy} = \frac{b^2h^2}{4}$	 $I_x = I_y = \frac{\pi R^4}{4}$ $I_{xy} = 0$	 $I_x = \frac{37bh^3}{2100}$ $I_y = \frac{bh^2}{21}$ $I_y = \frac{b^2h}{80}$ $I_y = \frac{b^2h}{5}$ $I_{xy} = \frac{b^2h^2}{120}$ $I_{xy} = \frac{b^2h^2}{12}$
Right triangle $I_x = \frac{bh^3}{36}$ $I_y = \frac{b^2h}{36}$ $I_{xy} = -\frac{b^2h^2}{72}$ $I_x = \frac{bh^3}{12}$ $I_y = \frac{b^2h}{12}$ $I_{xy} = \frac{b^2h^2}{24}$	Semicircle $I_x = 0.1098R^4$ $I_{xy} = 0$ $I_x = I_y = \frac{\pi R^4}{8}$ $I_{xy} = 0$	Half parabola $I_x = \frac{8bh^3}{175}$ $I_y = \frac{2bh^3}{7}$ $I_y = \frac{19b^2h}{480}$ $I_y = \frac{2b^2h}{15}$ $I_{xy} = \frac{b^2h^2}{60}$ $I_{xy} = \frac{b^2h^2}{6}$
Isosceles triangle $I_x = \frac{bh^3}{36}$ $I_y = \frac{b^2h}{48}$ $I_{xy} = 0$ $I_x = \frac{bh^3}{12}$ $I_{xy} = 0$	Quarter circle $I_x = I_y = 0.05488R^4$ $I_x = I_y = \frac{\pi R^4}{16}$ $I_{xy} = -0.01647R^4$ $I_{xy} = \frac{R^4}{8}$	Circular sector $I_x = \frac{R^4}{8}(2\alpha - \sin 2\alpha)$ $I_y = \frac{R^4}{8}(2\alpha + \sin 2\alpha)$ $I_{xy} = 0$
Triangle $\bar{x} = \frac{a+b}{3}$ $\bar{y} = \frac{h}{3}$	Quarter ellipse $\bar{x} = \frac{4a}{3\pi}$ $\bar{y} = \frac{4b}{3\pi}$ $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$	