



| SECCIÓN | BARICENTRO / ÁREA                              | MOMENTOS DE INERCIA Y MOMENTOS CENTRIFUGOS                    |                                                                |
|---------|------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------|
|         | $x_g = \frac{h}{2}$                            | $J_x = \frac{h^4}{3}$                                         | $J_{xg} = \frac{h^4}{12}$                                      |
|         | $y_g = \frac{h}{2}$                            | $J_y = \frac{h^4}{3}$                                         | $J_{yg} = \frac{h^4}{12}$                                      |
|         | $F = h^2$                                      | $J_{xy} = \frac{h^4}{4}$                                      | $J_{xyg} = 0$                                                  |
|         | $x_g = \frac{b}{2}$                            | $J_x = \frac{b \cdot h^3}{3}$                                 | $J_{xg} = \frac{b \cdot h^3}{12}$                              |
|         | $y_g = \frac{h}{2}$                            | $J_y = \frac{b^3 \cdot h}{3}$                                 | $J_{yg} = \frac{b^3 \cdot h}{12}$                              |
|         | $F = b \cdot h$                                | $J_{xy} = \frac{b^2 \cdot h^2}{4}$                            | $J_{xyg} = 0$                                                  |
|         | $x_g = \frac{b}{3}$                            | $J_x = \frac{b \cdot h^3}{12}$                                | $J_{xg} = \frac{b \cdot h^3}{36}$                              |
|         | $y_g = \frac{h}{3}$                            | $J_y = \frac{b^3 \cdot h}{12}$                                | $J_{yg} = \frac{b^3 \cdot h}{36}$                              |
|         | $F = \frac{b \cdot h}{2}$                      | $J_{xy} = \frac{b^2 \cdot h^2}{24}$                           | $J_{xyg} = \frac{-b^2 \cdot h^2}{72}$                          |
|         | $x_g = \frac{b}{2}$                            | $J_x = \frac{b \cdot h^3}{12}$                                | $J_{xg} = \frac{b \cdot h^3}{36}$                              |
|         | $y_g = \frac{h}{3}$                            | $J_y = \frac{7 \cdot b^3 \cdot h}{48}$                        | $J_{yg} = \frac{b^3 \cdot h}{48}$                              |
|         | $F = \frac{b \cdot h}{2}$                      | $J_{xy} = \frac{b^2 \cdot h^2}{12}$                           | $J_{xyg} = 0$                                                  |
|         | $x_g = \frac{b}{2}$                            | $J_x = \frac{7 \cdot b \cdot h^3}{48}$                        | $J_{xg} = \frac{b \cdot h^3}{48}$                              |
|         | $y_g = \frac{h}{2}$                            | $J_y = \frac{7 \cdot b^3 \cdot h}{48}$                        | $J_{yg} = \frac{b^3 \cdot h}{48}$                              |
|         | $F = \frac{b \cdot h}{2}$                      | $J_{xy} = \frac{b^2 \cdot h^2}{8}$                            | $J_{xyg} = 0$                                                  |
|         | $x_g = \frac{a}{2}$                            | $J_x = \frac{h^3}{12} \cdot \frac{a^2 + 4ab + 3b^2}{a + b}$   | $J_{xg} = \frac{h^3}{36} \cdot \frac{a^2 + 4ab + b^2}{a + b}$  |
|         | $y_g = \frac{h}{3} \cdot \frac{a + 2b}{a + b}$ | $J_y = \frac{h}{48} \cdot (7a^3 + 7a^2b + a \cdot b^2 + b^3)$ | $J_{yg} = \frac{h}{48} \cdot (a^3 + a^2b + a \cdot b^2 + b^3)$ |
|         | $F = \frac{h}{2} \cdot (a + b)$                | $J_{xy} = \frac{h^2}{12} \cdot (a^2 + 2ab)$                   | $J_{xyg} = 0$                                                  |



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|---------|----------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|         | $x_g = r$                                                            | $J_x = \frac{207 \cdot \sqrt{3} \cdot r^4}{144}$                                   | $J_{xg} = \frac{45 \cdot \sqrt{3} \cdot r^4}{144}$                                                                              |
|         | $y_g = \frac{\sqrt{3} \cdot r}{2}$                                   | $J_y = \frac{261 \cdot \sqrt{3} \cdot r^4}{144}$                                   | $J_{yg} = \frac{45 \cdot \sqrt{3} \cdot r^4}{144}$                                                                              |
|         | $F = \frac{3 \cdot \sqrt{3}}{2} \cdot r^2$                           | $J_{xy} = \frac{9 \cdot r^4}{4}$                                                   | $J_{xyg} = 0$                                                                                                                   |
|         | $x_g = r$                                                            | $J_x = \frac{5 \pi r^4}{4} = \frac{5 \pi D^4}{64}$                                 | $J_{xg} = \frac{\pi r^4}{4} = \frac{\pi D^4}{64}$                                                                               |
|         | $y_g = r$                                                            | $J_y = \frac{5 \pi r^4}{4} = \frac{5 \pi D^4}{64}$                                 | $J_{yg} = \frac{\pi r^4}{4} = \frac{\pi D^4}{64}$                                                                               |
|         | $F = \pi r^2 = \frac{\pi D^2}{4}$                                    | $J_{xy} = \pi r^4 = \frac{\pi D^4}{16}$                                            | $J_{xyg} = 0$                                                                                                                   |
|         | $x_g = r$                                                            | $J_x = \frac{\pi r^4}{8} = \frac{\pi D^4}{128}$                                    | $J_{xg} = r^4 \cdot \left( \frac{\pi}{8} - \frac{8}{9\pi} \right)$                                                              |
|         | $y_g = \frac{4r}{3\pi}$                                              | $J_y = \frac{5 \pi r^4}{8} = \frac{5 \pi D^4}{128}$                                | $J_{yg} = \frac{\pi r^4}{8} = \frac{\pi D^4}{128}$                                                                              |
|         | $F = \frac{\pi r^2}{2} = \frac{\pi D^2}{8}$                          | $J_{xy} = \frac{2r^4}{3}$                                                          | $J_{xyg} = 0$                                                                                                                   |
|         | $x_g = \frac{4r}{3\pi}$                                              | $J_x = \frac{\pi r^4}{16} = \frac{\pi D^4}{256}$                                   | $J_{xg} = r^4 \cdot \left( \frac{\pi}{16} - \frac{4}{9\pi} \right)$                                                             |
|         | $y_g = \frac{4r}{3\pi}$                                              | $J_y = \frac{\pi r^4}{16} = \frac{\pi D^4}{256}$                                   | $J_{yg} = r^4 \cdot \left( \frac{\pi}{16} - \frac{4}{9\pi} \right)$                                                             |
|         | $F = \frac{\pi r^2}{4} = \frac{\pi D^2}{16}$                         | $J_{xy} = \frac{r^4}{8}$                                                           | $J_{xyg} = r^4 \cdot \left( \frac{1}{8} - \frac{4}{9\pi} \right)$                                                               |
|         | $x_g = \frac{2}{3} \cdot \frac{r \cdot \text{seno}(\alpha)}{\alpha}$ | $J_x = \frac{r^4}{4} \cdot \left( \alpha - \frac{\text{seno}(2\alpha)}{2} \right)$ | $J_{xg} = \frac{r^4}{4} \cdot \left( \alpha - \frac{\text{seno}(2\alpha)}{2} \right)$                                           |
|         | $y_g = 0$                                                            | $J_y = \frac{r^4}{4} \cdot \left( \alpha + \frac{\text{seno}(2\alpha)}{2} \right)$ | $J_{yg} = r^4 \cdot \left[ \frac{\alpha}{4} + \frac{\text{seno}(2\alpha)}{8} - \frac{4 \text{seno}^2(\alpha)}{9\alpha} \right]$ |
|         | $F = \alpha \cdot r^2$                                               | $J_{xy} = 0$                                                                       | $J_{xyg} = 0$                                                                                                                   |
|         | $x_g = R$                                                            | $J_x = \frac{\pi}{4} \cdot (5R^4 - 4R^2 \cdot r^2 - r^4)$                          | $J_{xg} = \frac{\pi}{4} \cdot (R^4 - r^4)$                                                                                      |
|         | $y_g = R$                                                            | $J_y = \frac{\pi}{4} \cdot (5R^4 - 4R^2 \cdot r^2 - r^4)$                          | $J_{yg} = \frac{\pi}{4} \cdot (R^4 - r^4)$                                                                                      |
|         | $F = \pi (R^2 - r^2)$                                                | $J_{xy} = \pi R^2 \cdot (R^2 - r^2)$                                               | $J_{xyg} = 0$                                                                                                                   |