Moments of Inertia of Common Geometric Shapes

Common Geometric Shapes	
Rectangle $\overline{I}_{x'} = \frac{1}{12}bh^3$ $\overline{I}_{y'} = \frac{1}{12}b^3h$ $I_x = \frac{1}{3}bh^3$ $I_y = \frac{1}{3}b^3h$ $J_C = \frac{1}{12}bh(b^2 + h^2)$	$ \begin{array}{c cccc} & y & y' \\ \hline h & C & x' \\ \hline & b & x \end{array} $
Triangle $\overline{I}_{x'} = \frac{1}{36}bh^3$ $I_x = \frac{1}{12}bh^3$	$ \begin{array}{c c} h & C \\ \hline & \frac{h}{3} & x' \\ \hline & b & x' \end{array} $
Circle $ \overline{I}_x = \overline{I}_y = \frac{1}{4}\pi r^4 $ $ J_O = \frac{1}{2}\pi r^4 $	
Semicircle $I_x = I_y = \frac{1}{8}\pi r^4$ $J_O = \frac{1}{4}\pi r^4$	y C
Quarter circle $I_x = I_y = \frac{1}{16}\pi r^4$ $J_O = \frac{1}{8}\pi r^4$	y $O \longrightarrow x$