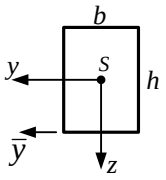
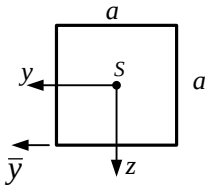
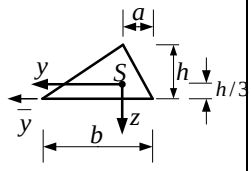
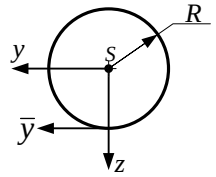
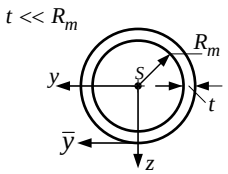
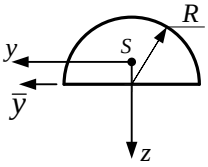
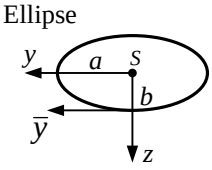
UNIVERSITÄT SIEGEN FB 10 • Lehrstuhl für Baustatik Univ.-Prof. Dr.-Ing. habil. Ch. Zhang/ Dipl.-Ing. Oliver Carl		**Technische Mechanik II** Arbeitsblatt - Flächenträgheitsmomente -

Flächenträgheitsmomente einiger Querschnitte:

Fläche	I_y	I_z	I_{yz}	I_p	$I_{\bar{y}}$
Rechteck 	$\frac{bh^3}{12}$	$\frac{hb^3}{12}$	0	$\frac{bh}{12}\left(h^2+b^2\right)$	$\frac{bh^3}{3}$
Quadrat 	$\frac{a^4}{12}$	$\frac{a^4}{12}$	0	$\frac{a^4}{6}$	$\frac{a^4}{3}$
Dreieck 	$\frac{bh^3}{36}$	$\frac{bh}{36}\left(b^2-ba+a^2\right)$	$\frac{bh^2}{72}(b-2a)$	$\frac{bh}{36}\left(h^2+b^2-ba+a^2\right)$	$\frac{bh^3}{12}$
Kreis 	$\frac{\pi R^4}{4}$	$\frac{\pi R^4}{4}$	0	$\frac{\pi R^4}{2}$	$\frac{5\pi}{4}R^4$
dünner Kreisring 	$\pi R_m^3 t$	$\pi R_m^3 t$	0	$2\pi R_m^3 t$	$3\pi R_m^3 t$
Halbkreis 	$\frac{R^4}{72\pi}\left(9\pi^2-64\right)$	$\frac{\pi R^4}{8}$	0	$\frac{R^4}{36\pi}\left(9\pi^2-32\right)$	$\frac{\pi R^4}{8}$
Ellipse 	$\frac{\pi}{4}ab^3$	$\frac{\pi}{4}ba^3$	0	$\frac{\pi ab}{4}\left(a^2+b^2\right)$	$\frac{5\pi}{4}ab^3$

Mehr Beispiele dazu, siehe: Schneider, Bautabellen, 21. Auflage, S. 4.28 – 4.29.