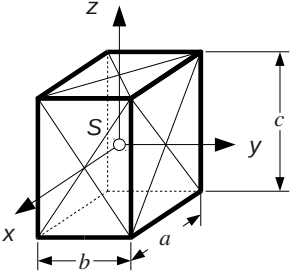
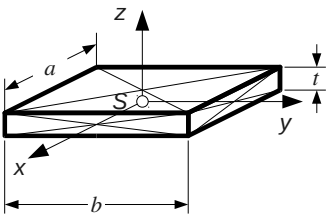
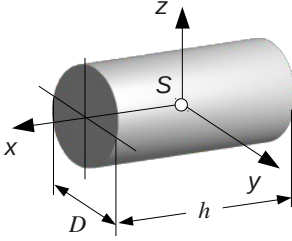
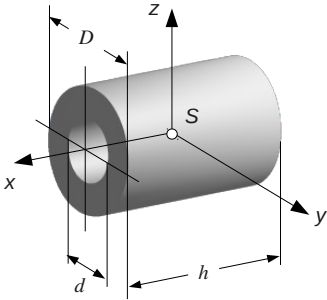
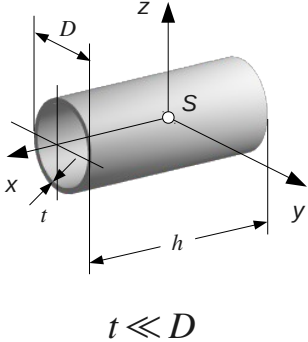
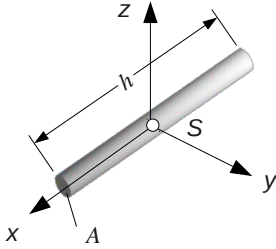
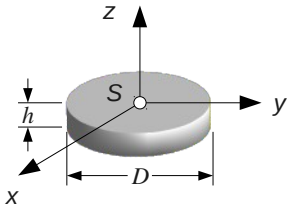
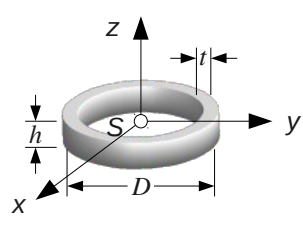
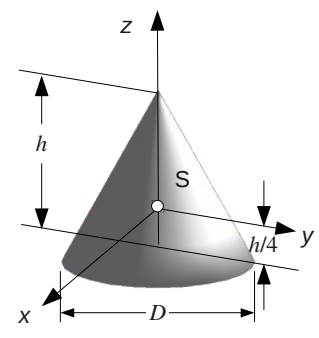
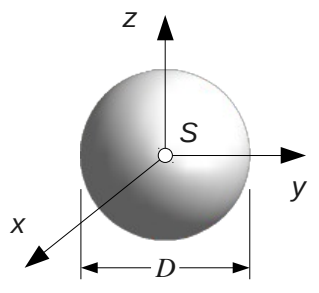
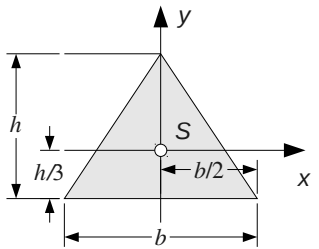
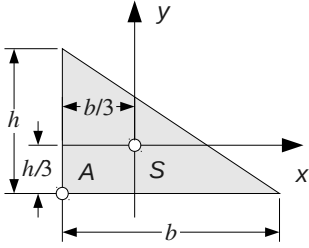
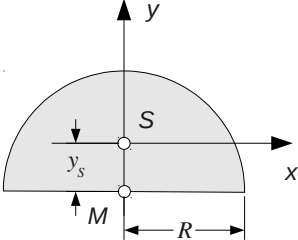


Massenträgheitsmomente

<p>Quader</p>		$m = \rho abc$ $J_x^S = \frac{1}{12} m (b^2 + c^2)$ $J_y^S = \frac{1}{12} m (a^2 + c^2)$ $J_z^S = \frac{1}{12} m (a^2 + b^2)$
<p>Dünne Rechteckplatte</p>	 <p style="text-align: center;">$t \ll a, b$</p>	$m = \rho abt$ $J_x^S = \frac{1}{12} m b^2$ $J_y^S = \frac{1}{12} m a^2$ $J_z^S = \frac{1}{12} m (a^2 + b^2)$
<p>Zylinder</p>		$m = \frac{1}{4} \pi \rho D^2 h$ $J_x^S = \frac{1}{8} m D^2$ $J_y^S = \frac{1}{4} m \left(\frac{D^2}{4} + \frac{h^2}{3} \right)$ $J_z^S = \frac{1}{4} m \left(\frac{D^2}{4} + \frac{h^2}{3} \right)$

<p>Dickwandiger Hohlzylinder</p>		$m = \frac{1}{4} \pi \rho h (D^2 - d^2)$ $J_x^S = \frac{1}{8} m (D^2 + d^2)$ $J_y^S = \frac{m}{4} \left(\frac{D^2 + d^2}{4} + \frac{h^2}{3} \right)$ $J_z^S = \frac{m}{4} \left(\frac{D^2 + d^2}{4} + \frac{h^2}{3} \right)$
<p>Dünnwandiger Hohlzylinder</p>	 <p style="text-align: center;">$t \ll D$</p>	$m = \pi \rho D t h$ $J_x^S = \frac{1}{4} m D^2$ $J_y^S = \frac{1}{4} m \left(\frac{D^2}{2} + \frac{h^2}{3} \right)$ $J_z^S = \frac{1}{4} m \left(\frac{D^2}{2} + \frac{h^2}{3} \right)$
<p>Dünnere Stab</p>	 <p style="text-align: center;">$A \ll h^2$</p>	$m = \rho A h$ $J_x^S = 0$ $J_y^S = \frac{1}{12} m h^2$ $J_z^S = \frac{1}{12} m h^2$
<p>Dünne Kreis- scheibe</p>	 <p style="text-align: center;">$h \ll D$</p>	$m = \frac{1}{4} \pi \rho D^2 h$ $J_x^S = \frac{1}{16} m D^2$ $J_y^S = \frac{1}{16} m D^2$ $J_z^S = \frac{1}{8} m D^2$

<p>Dünner Kreisring</p>	 <p>$h \ll D, t \ll D$</p>	$m = \pi \rho D t h$ $J_x^S = \frac{1}{8} m D^2$ $J_y^S = \frac{1}{8} m D^2$ $J_z^S = \frac{1}{4} m D^2$
<p>Kegel</p>		$m = \frac{1}{12} \pi \rho D^2 h$ $J_x^S = \frac{3}{80} m (D^2 + h^2)$ $J_y^S = \frac{3}{80} m (D^2 + h^2)$ $J_z^S = \frac{3}{40} m D^2$
<p>Kugel</p>		$m = \frac{1}{6} \pi \rho D^3$ $J_x^S = \frac{1}{10} m D^2$ $J_y^S = \frac{1}{10} m D^2$ $J_z^S = \frac{1}{10} m D^2$
<p>Gleichschenklige Dreieckscheibe konstanter Dicke d</p>		$m = \rho d b h$ $J_x^S = \frac{1}{18} m h^2$ $J_y^S = \frac{1}{24} m b^2$ $J_z^S = \frac{m}{72} (3b^2 + 4h^2)$

<p>Rechtwinklige Dreieckscheibe konstanter Dicke d</p>		$m = \rho d b h$ $J_x^S = \frac{1}{18} m h^2, \quad J_x^A = 3 J_x^S$ $J_y^S = \frac{1}{18} m b^2, \quad J_y^A = 3 J_y^S$ $J_z^S = \frac{m}{18} (b^2 + h^2), \quad J_z^A = 3 J_z^S$ $J_{xy}^S = \frac{m}{36} h b, \quad J_{xy}^A = -\frac{m}{12} h b$
<p>Dünne Halbkreisscheibe mit konstanter Dicke d</p>	 <p style="text-align: center;">$d \ll R$</p>	$m = \frac{1}{2} \rho \pi R^2 d, \quad y_s = \frac{4R}{3\pi}$ $J_x^S = m R^2 \left(\frac{1}{3} - \frac{16}{9\pi^2} \right)$ $J_y^S = J_x^M = J_y^M = \frac{1}{4} m R^2$ $J_z^S = m R^2 \left(\frac{1}{2} - \frac{16}{9\pi^2} \right)$ $J_z^M = \frac{1}{2} m R^2$