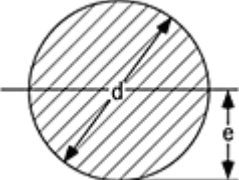
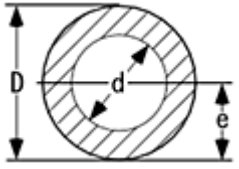
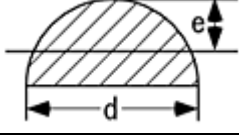
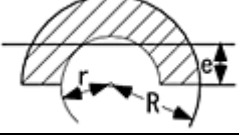
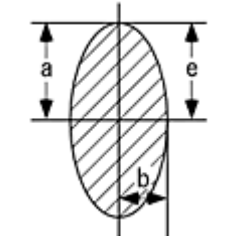
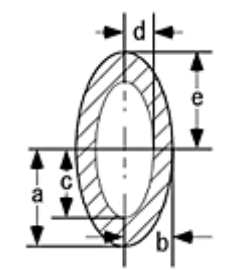


# 断面積の力学的諸性質

- 断面の慣性モーメント、断面係数、回転半径その他 -

円形

断面の形状	断面積 A	中立軸より 最遠部までの 距離 e	慣性モーメント I	断面係数 $Z = \frac{I}{e}$	回転半径 $r = \sqrt{\frac{I}{A}}$
	$\frac{\pi d^2}{4} = 0.7854d^2$	$\frac{d}{2}$	$\frac{\pi d^4}{64} = 0.049d^4$	$\frac{\pi d^3}{32} = 0.098d^3$	$\frac{d}{4}$
	$\frac{\pi (D^2 - d^2)}{4}$ $= 0.7854 (D^2 - d^2)$	$\frac{D}{2}$	$\frac{\pi (D^4 - d^4)}{64}$ $= 0.049 (D^4 - d^4)$	$\frac{\pi (D^4 - d^4)}{32D}$ $= 0.098 \frac{D^4 - d^4}{D}$	$\frac{\sqrt{D^2 + d^2}}{4}$
	$\frac{\pi d^2}{8} = 0.393d^2$	$\frac{(3\pi - 4)d}{6\pi}$ $= 0.288d$	$\frac{(9\pi^2 - 64)d^4}{1152\pi}$ $= 0.007d^4$	$\frac{(9\pi^2 - 64)d^3}{192(3\pi - 4)}$ $= 0.024d^3$	$\sqrt{\frac{(9\pi^2 - 64)d^2}{12\pi}}$ $= 0.132d$
	$\frac{\pi (R^2 - r^2)}{2}$ $= 1.5708 (R^2 - r^2)$	$\frac{4(R^3 - r^3)}{3\pi(R^2 - r^2)}$ $= 0.424 \frac{R^3 - r^3}{R^2 - r^2}$	$0.1098 (R^4 - r^4) -$ $\frac{0.283R^2r^2(R - r)}{R + r}$	$\frac{I}{e}$	$\sqrt{\frac{I}{A}}$
	$\pi ab = 3.1416ab$	a	$\frac{\pi a^3 b}{4} = 0.7854a^3 b$	$\frac{\pi a^2 b}{4} = 0.7854a^2 b$	$\frac{a}{2}$
	$\pi (ab - cd)$ $= 3.1416 (ab - cd)$	a	$\frac{\pi}{4} (a^3 b - c^3 d)$ $= 0.7854 (a^3 b - c^3 d)$	$\frac{\pi (a^3 b - c^3 d)}{4a}$ $= 0.7854 \frac{a^3 b - c^3 d}{a}$	$\frac{1}{2} \sqrt{\frac{a^3 b - c^3 d}{ab - cd}}$