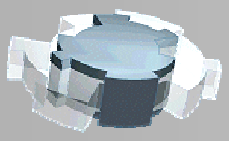
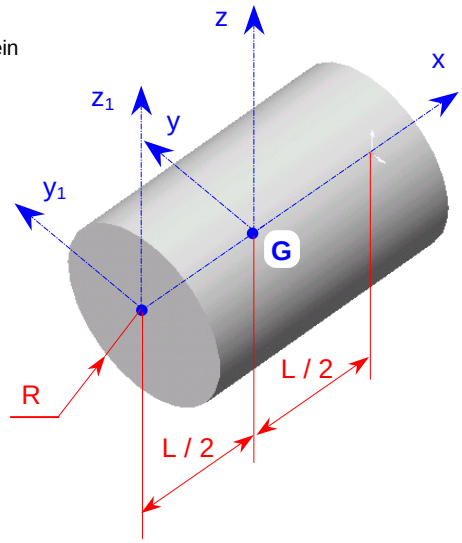


ETUDE DES CONSTRUCTIONS

Ressource

Notion(s) abordées(s) en	**CI 6** / dynamique : moment d'inertie
Notion(s) requise(s) en	**CI 2** / communication technique

Figure 1 :
Cylindre plein



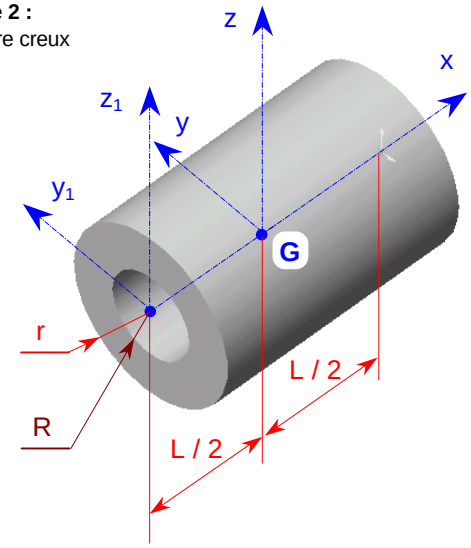
FORMULES des moments d'inerte

$$Jx = \frac{mR^2}{2}$$

$$Jz = Jy = \frac{mR^2}{4} + \frac{mL^2}{12}$$

$$Jz_1 = Jy_1 = \frac{mR^2}{4} + \frac{mL^2}{3}$$

Figure 2 :
Cylindre creux



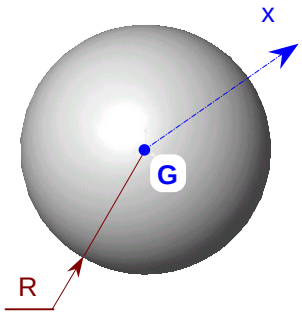
FORMULES des moments d'inerte

$$Jx = \frac{mR^2}{2} + \frac{mr^2}{2}$$

$$Jz = Jy = \frac{mR^2}{4} + \frac{mr^2}{4} + \frac{mL^2}{12}$$

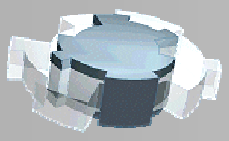
$$Jz_1 = Jy_1 = \frac{mR^2}{4} + \frac{mr^2}{4} + \frac{mL^2}{3}$$

Figure 3 :
Sphère



FORMULES du moment d'inerte

$$Jx = Jz = Jy = \frac{2}{5}(mR^2)$$

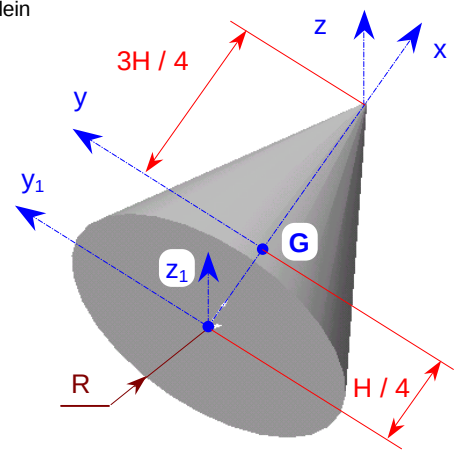


ETUDE DES CONSTRUCTIONS

Ressource

Notion(s) abordées(s) en	**CI 6** / dynamique : moment d'inertie
Notion(s) requise(s) en	**CI 2** / communication technique

Figure 4 :
Cylindre plein



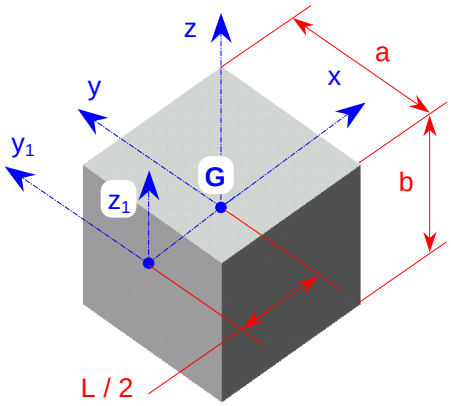
FORMULES des moments d'inerte

$$Jx = \frac{3mR^2}{10}$$

$$Jy = Jz = \frac{3mR^2}{20} + \frac{3mh^2}{5}$$

$$Jy_1 = Jz_1 = \frac{3mR^2}{20} + \frac{3mh^2}{10}$$

Figure 5 :
Cylindre creux



FORMULES des moments d'inerte

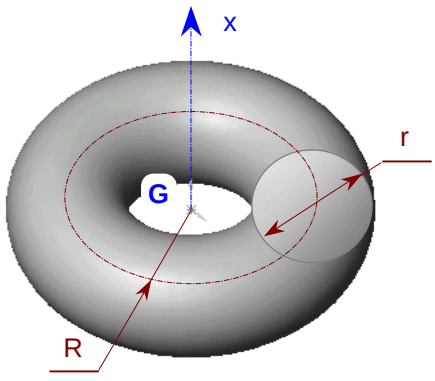
$$Jx = \frac{m}{12}(a^2 + b^2)$$

$$Jy = \frac{m}{12}(b^2 + L^2)$$

$$Jz = \frac{m}{12}(a^2 + L^2)$$

$$Jy_1 = \frac{mb^2}{12} + \frac{mL^2}{12}$$

Figure 6 :
Sphère



FORMULES du moment d'inerte

$$Jx = \frac{m}{4}(4R^2 + 3r^2)$$