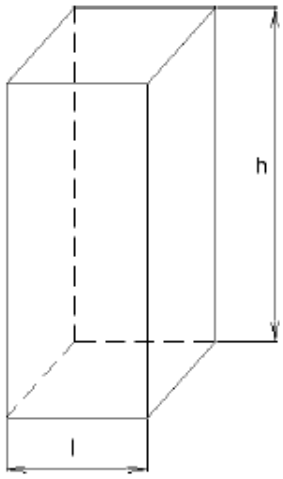
VOLUME DOS SÓLIDOS GEOMÉTRICOS

PRISMA QUADRANGULAR



$P=4l$

$A_b=l^2$

$a=\frac{l}{2}$

$d=l\sqrt{2}$

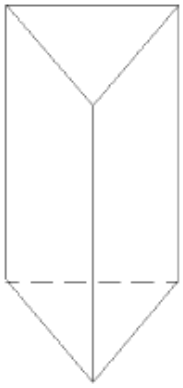
$A_{FL}=l.H$

$Al=4.l.H$

$At=Al+2A_b$

$V=A_b.H$

PRISMA TRIANGULAR



P=3l

$A_b = \frac{l^2\sqrt{3}}{4}$

$a = \frac{l\sqrt{3}}{6}$

$h = \frac{l\sqrt{3}}{2}$ (altura da base)

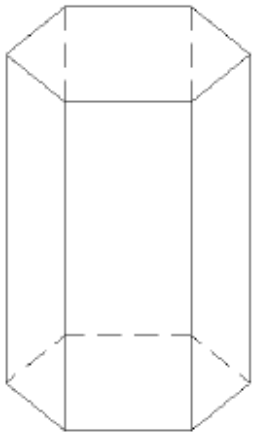
A_{FL}=l.H

Al=3.l.H

$At=Al+2A_b$

$V=A_b.H$

PRISMA HEXAGONAL



P=6l

$A_b = \frac{6l^2\sqrt{3}}{4}$

$a = \frac{l\sqrt{3}}{2}$

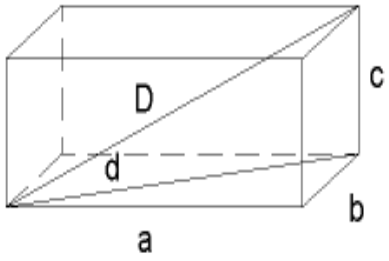
A_{FL}=l.H

Al=6.l.H

$At=Al+2A_b$

$V=A_b.H$

PARALELEPÍPEDO



$Al=2ac+2bc$

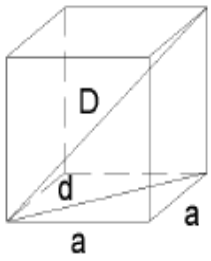
$At=Al+2ab$ ou

$At=2ab+2ac+2bc$

$V=AxBxC$

$D=a^2+b^2+c^2$

CUBO



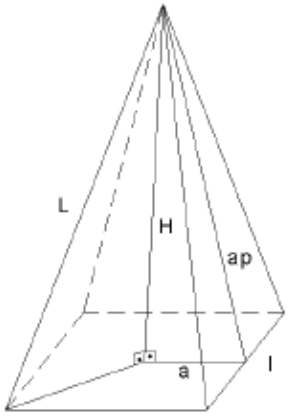
$S=12a$ (soma das arestas)

$A_{face}=a^2$ $\quad Al=4a^2$

$At=6a^2$ $\quad V=a^3$

$d=a\sqrt{2}$ $\quad D=a\sqrt{3}$

PIRÂMIDE QUADRANGULAR



$H^2+a^2=ap^2$

$H^2+R^2=L^2$

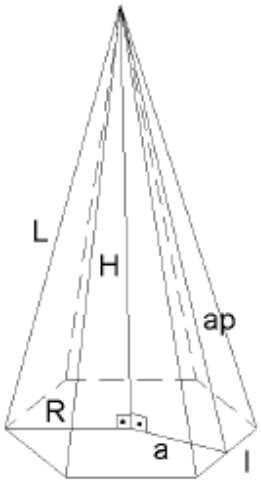
$A_{FL} = \frac{l.ap}{2}$

$Al = \frac{4.l.ap}{2}$

$At=Al+A_b$

$V = \frac{A_b.H}{3}$

PIRÂMIDE HEXAGONAL



$H^2+a^2=ap^2$

$H^2+R^2=L^2$

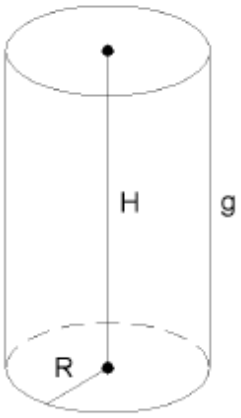
$A_{FL} = \frac{l.ap}{2}$

$Al = \frac{6.l.ap}{2}$

$At=Al+A_b$

$V = \frac{A_b.H}{3}$

CILINDRO



$g=h$

$\varnothing=2R$

$P=2\pi R$

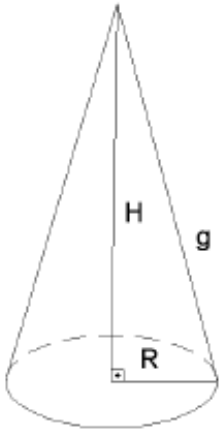
$A_b=\pi R^2$

$Al=2\pi Rg$ ou $Al=2\pi RH$

$At=Al+2A_b$

$V=A_b \times H$ ou $V=A_b \times g$

CONE



$H^2+R^2=g^2$

$\varnothing=2R$

$P=2\pi R$

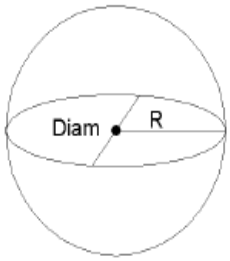
$A_b=\pi R^2$

$Al=\pi Rg$

$At=Al+A_b$

$V=\frac{A_b.H}{3}$

ESFERA



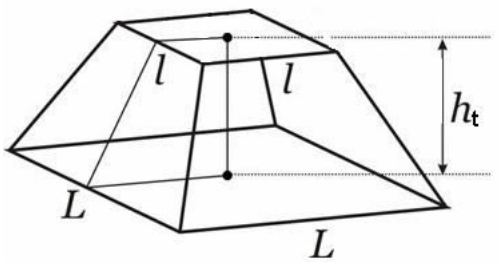
$\varnothing = 2R$

$A = 4\pi R^2$

$V = \frac{4\pi R^3}{3}$

Acm = área da círculo máximo $Acm = \pi R^2$

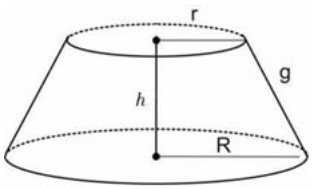
Tronco de Pirâmide



$$V = \frac{h}{3} * \left(A + \sqrt{A * a} + a\right)$$

V = volume
h = altura do tronco da pirâmide
A = área da base de maior superfície
a = área da base de menor superfície

Tronco de Cone



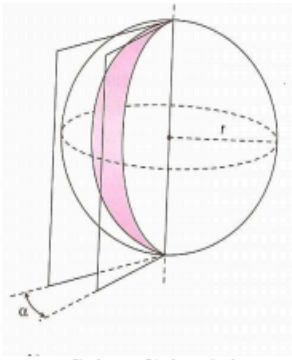
Área Superficial

$$A_s = \pi * g * (R + r)$$

Volume

$$V = \frac{\pi * h}{3} * (r^2 + r * R + R^2)$$

Fuso Esférico

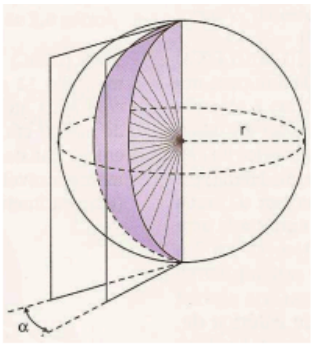


A intersecção do diedro com a superfície esférica é denominada **fuso esférica.**
A área da superfície do fuso esférico é dada por:

$\mathbf{A_F} = \frac{\alpha.\pi.r^2}{90^0}$ (α em graus) **ou** $\mathbf{A_F} = 2.\alpha.r^2$ (α em radianos)

$\alpha \rightarrow$ ângulo diedro

Cunha Esférica

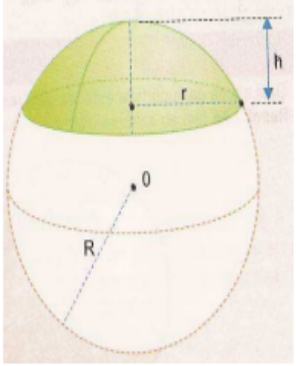


A intersecção do diedro com a esfera é denominada **cunha esférica.**
A **área** da cunha esférica é a soma das áreas do seu fuso com o círculo máximo da esfera. $\mathbf{A_c = A_F} + \pi.r^2$
O volume da cunha é dado por:

$V = \frac{\alpha.\pi.r^3}{270^0}$ (α em graus) ou $V = \frac{2.\alpha.r^3}{3}$ (α em radianos)

Volume da Calota

Sendo R o raio da esfera e h a altura da calota esférica, então:



Área da calota $A = 2.\pi.R.h$ Volume do segmento esférico $V = \frac{\pi.h^2.(3.r-h)}{3}$