BookMaster
CONECTAMOS CONOCIMIENTOS

Esquema-formulario

GEOMETRÍA

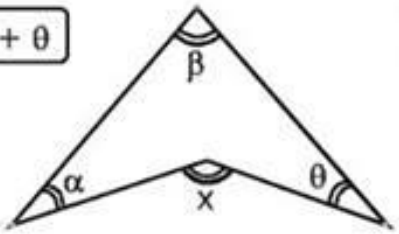
CONTENIDO:

- Triángulos
- Congruencia de triángulos
- Cuadriláteros
- Circunferencia
- Proporcionalidad y semejanza de triángulos
- Relaciones métricas
- Áreas triángulares
- Áreas cuadrangulares
- Área circular
- Geometria del espacio
- Poliedros regulares
- Prismas y Cilindro
- Pirámide - Cono
- Esfera y teorema de Pappus Guldin
- Poligonos y Poliedros regulares

TRIÁNGULOS

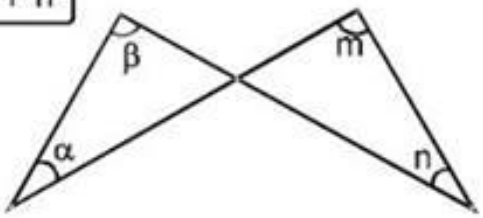
Se cumple:

$x = \alpha + \beta + \theta$



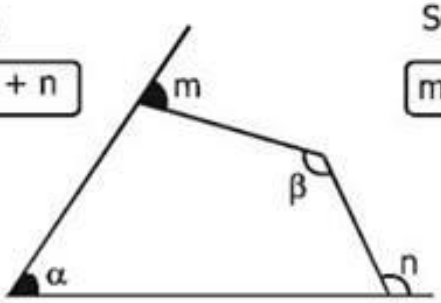
Se cumple:

$\alpha + \beta = m + n$



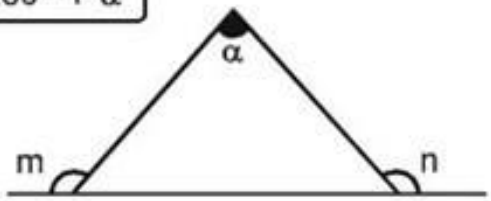
Se cumple:

$\alpha + \beta = m + n$

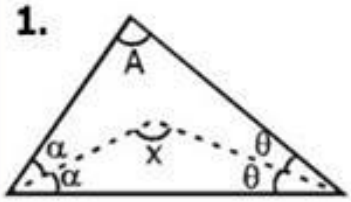


Se cumple:

$m + n = 180° + \alpha$

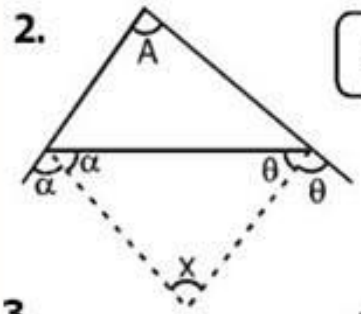


1.



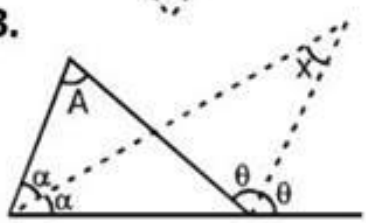
$x = 90° + \frac{A}{2}$

2.



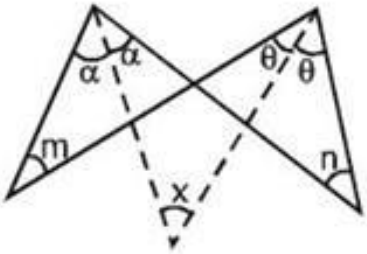
$x = 90° - \frac{A}{2}$

3.



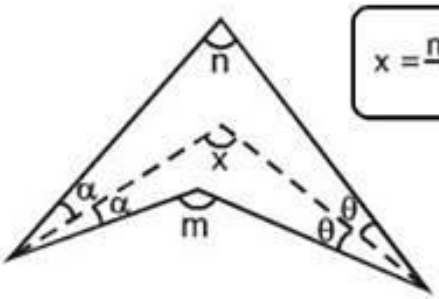
$x = \frac{A}{2}$

4.



$x = \frac{m + n}{2}$

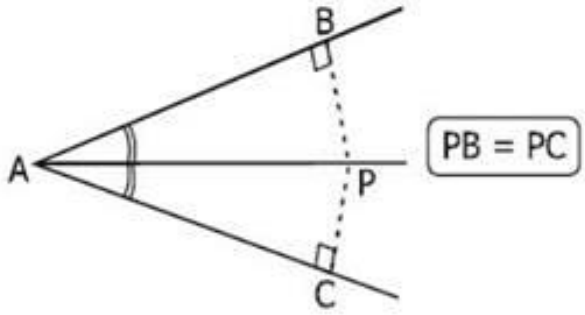
5.



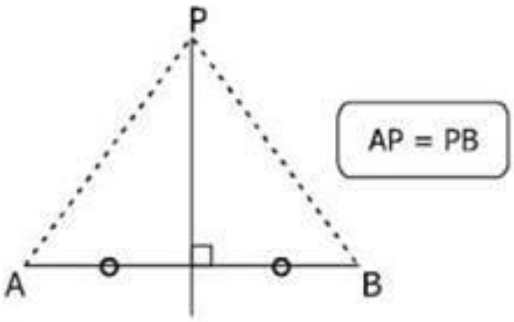
$x = \frac{m + n}{2}$

CONGRUENCIA DE TRIÁNGULOS

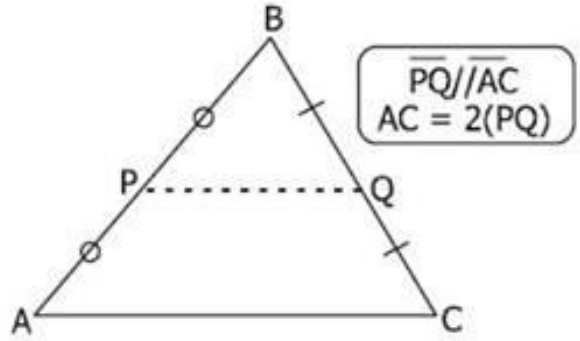
T. de la Bisectriz



T. de la Mediatriz

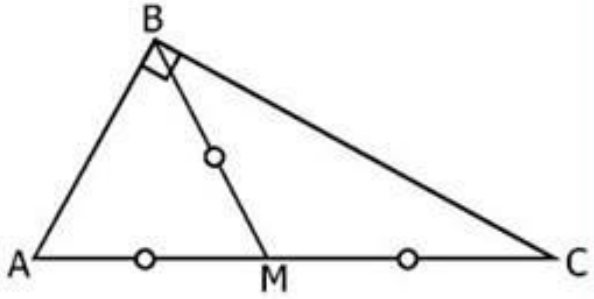


T. de los Puntos Medios

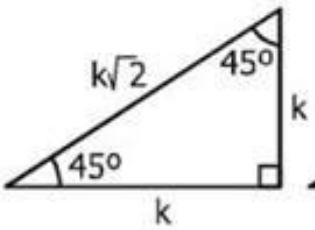


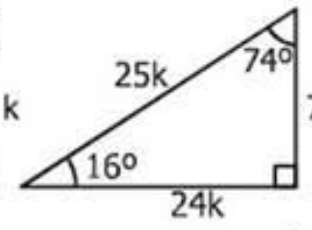
Mediana relativa a la hipotenusa

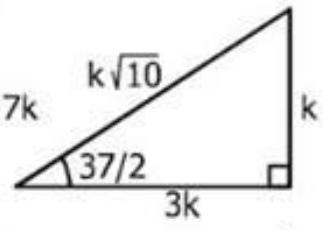
Si BM es la mediana relativa a la hipotenusa $\Rightarrow$ BM = AM = MC

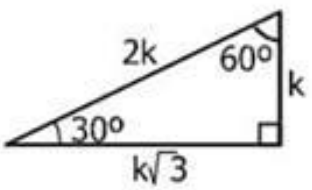


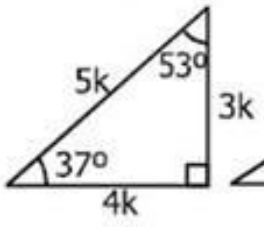
Aproximados

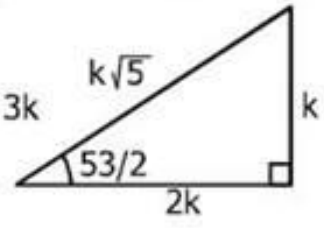




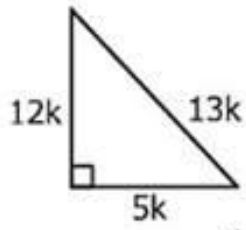


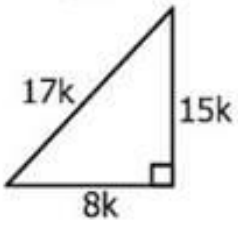






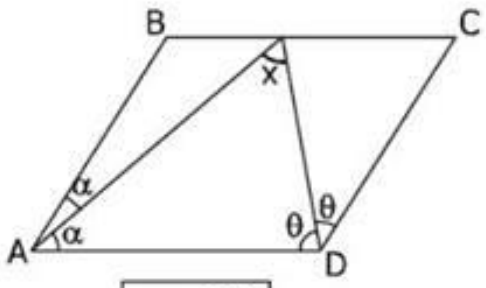
Pitagóricos





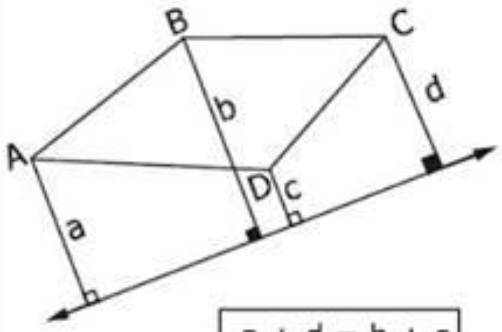
CUADRILÁTEROS

1. ABCD es un paralelogramo



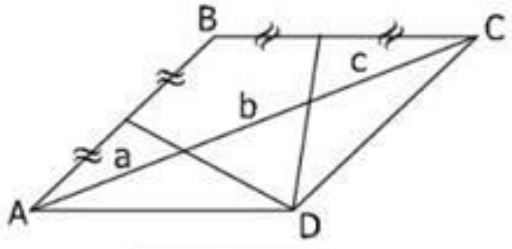
$x = 90°$

2. Si ABCD es un paralelogramo



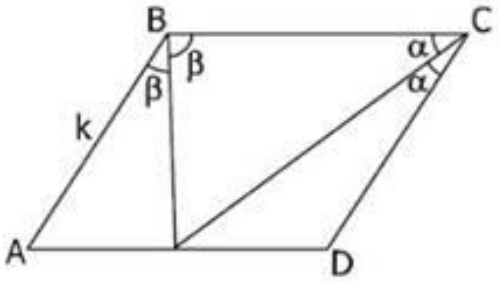
$a + d = b + c$

3. Si ABCD es un paralelogramo



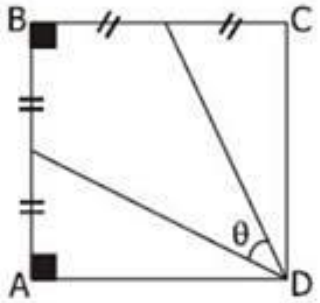
$a = b = c$

4. Si ABCD es un paralelogramo



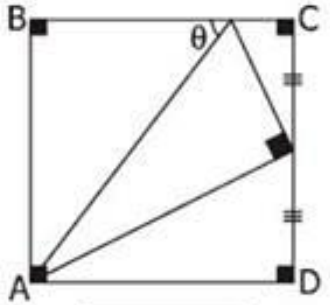
Perímetro del ▱ ABCD = 6k

5. Si ABCD es un cuadrado

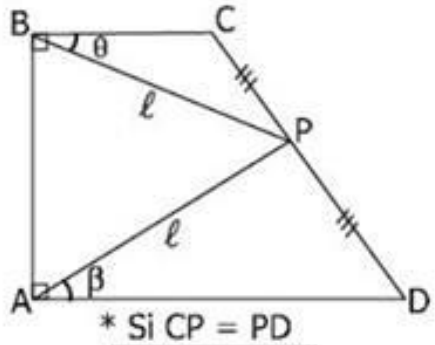


$\theta = 37°$

6. Si ABCD es un cuadrado



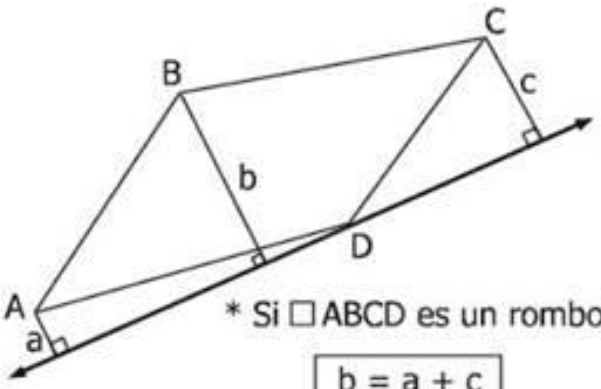
$\theta = 53°$



* Si CP = PD

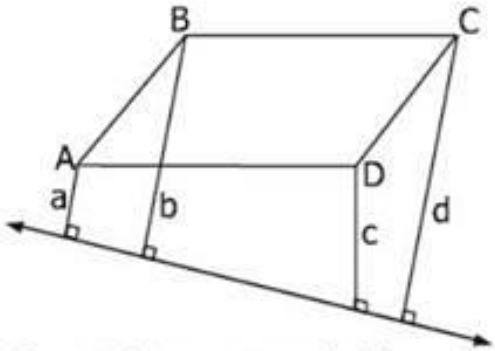
$PA = PB$

$\theta = \beta$



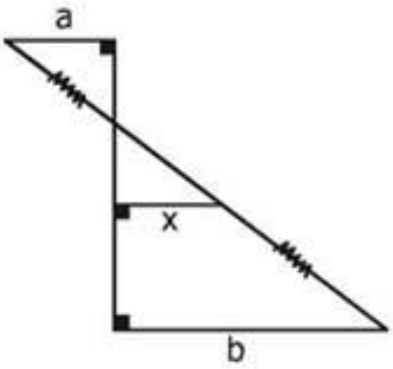
* Si □ ABCD es un romboide

$b = a + c$



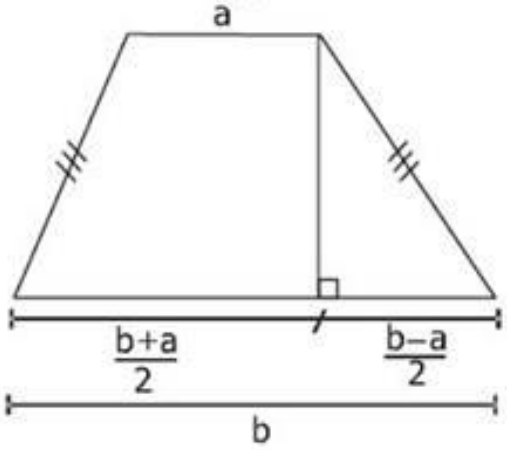
* Si □ ABCD es un romboide

$a + d = b + c$



$$x = \frac{b - a}{2}$$

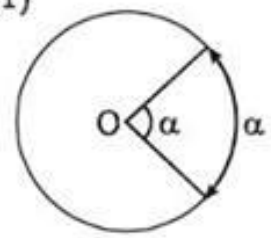
▱ ABCD trapecio isósceles



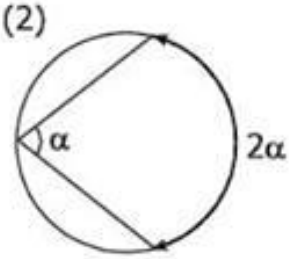
CIRCUNFERENCIA

Ángulos asociados a la circunferencia

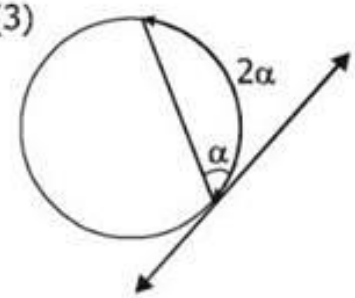
(1)



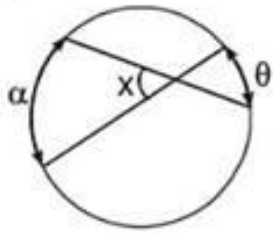
(2)



(3)

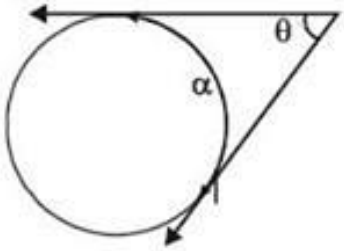


(4)



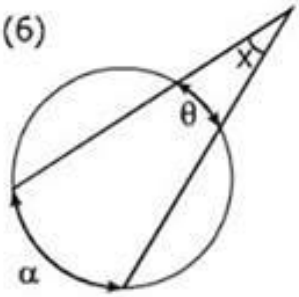
$$x = \frac{\alpha + \theta}{2}$$

(5)



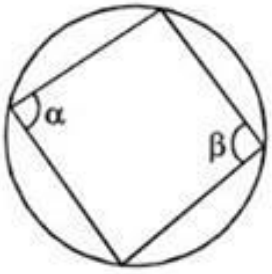
$$\alpha + \theta = 180°$$

(6)



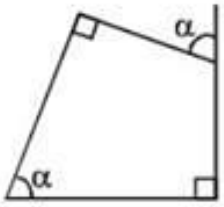
$$x = \frac{\alpha - \theta}{2}$$

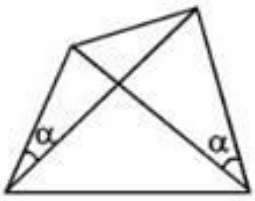
Cuadrilátero inscrito

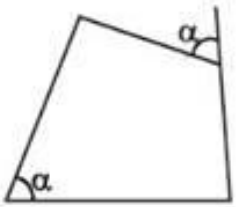


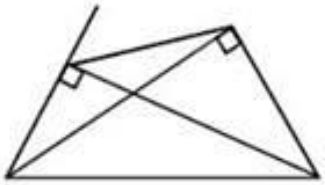
$$\alpha + \beta = 180°$$

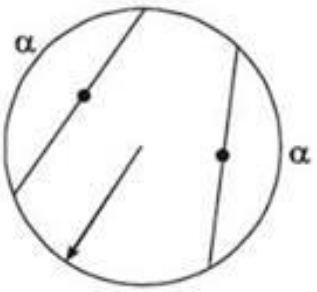
Cuadrilátero inscriptible

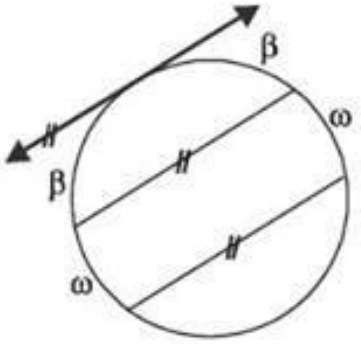


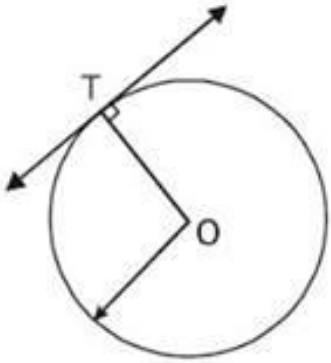


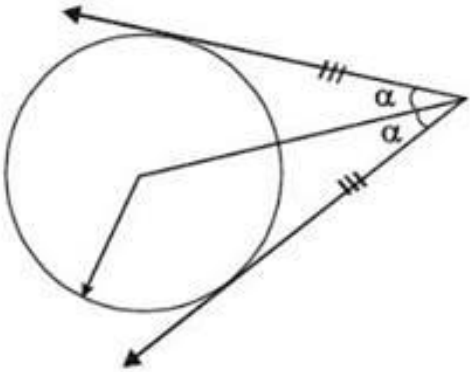


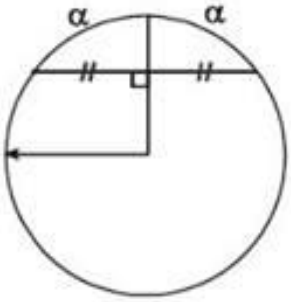


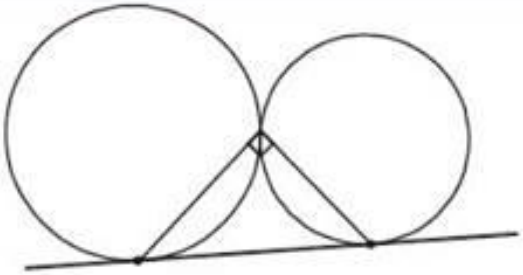




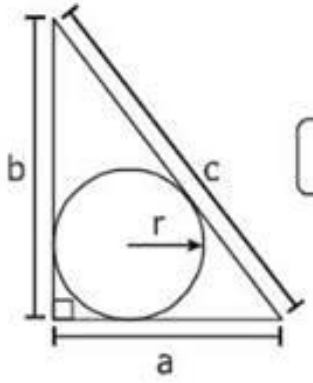






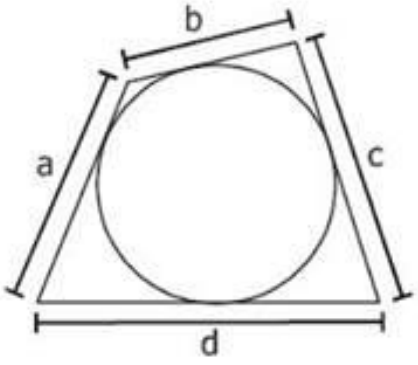


Teorema de Poncelet



$$a + b = c + 2r$$

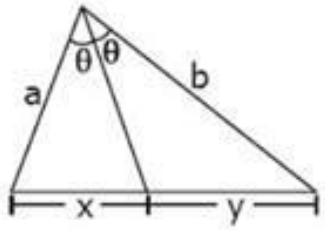
Teorema de Pitot



$$a + c = b + d$$

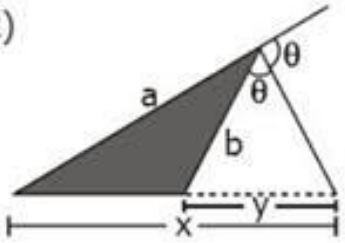
PROPORCIONALIDAD Y SEMEJANZA DE TRIÁNGULOS

(1)



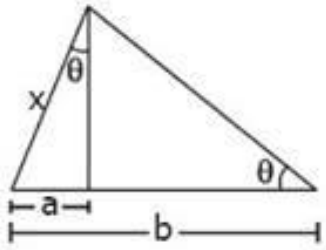
$$\frac{a}{b}=\frac{x}{y}$$

(2)



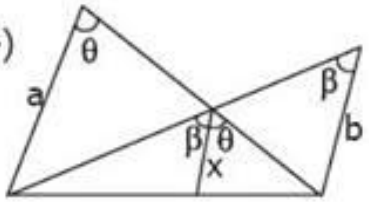
$$\frac{a}{b}=\frac{x}{y}$$

(3)



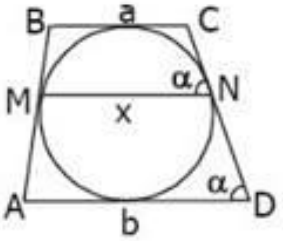
$$x^2 = ab$$

(4)



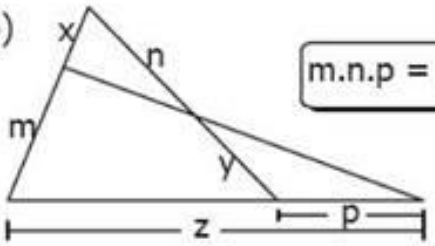
$$x=\frac{ab}{a+b}$$

(5) En todo trapecio
(M y N puntos de tangencia)



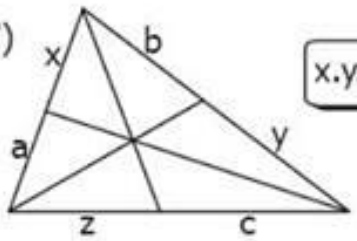
$$\frac{2}{x}=\frac{1}{a}+\frac{1}{b}$$

(6)



$$m.n.p = x.y.z$$

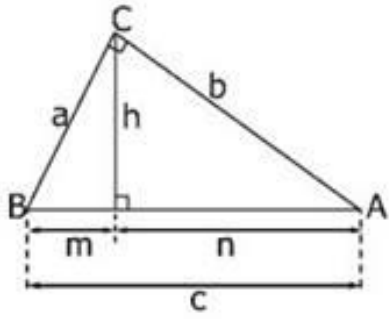
(7)



$$x.y.z = a.b.c$$

RELACIONES MÉTRICAS

(1)

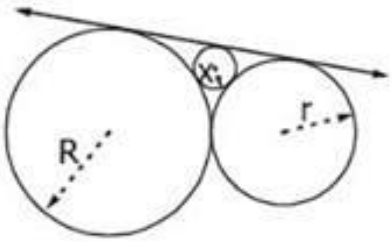


$a^2 = c \cdot m$ $\quad h^2 = m \cdot n$

$a \cdot b = c \cdot h$ $\quad a^2 + b^2 = c^2$

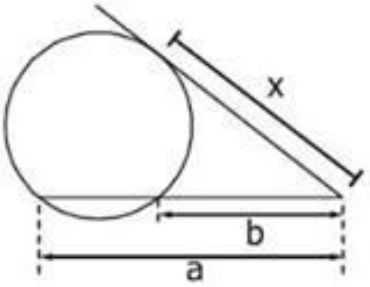
$b^2 = c \cdot n$

(2)

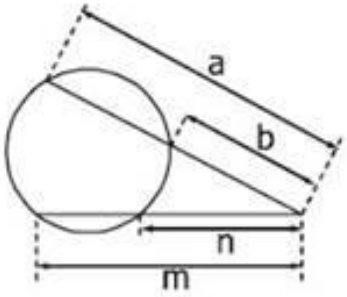


$$\frac{1}{\sqrt{x}} = \frac{1}{\sqrt{R}} + \frac{1}{\sqrt{r}}$$

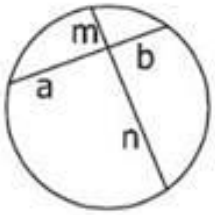
(3)



$$x^2 = a \cdot b$$

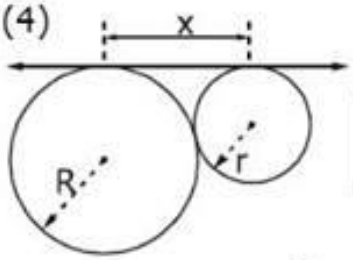


$$a \cdot b = m \cdot n$$

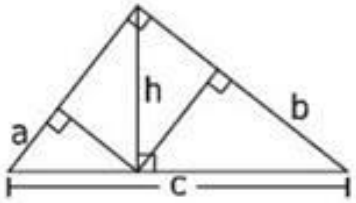


$$a \cdot b = m \cdot n$$

(4)



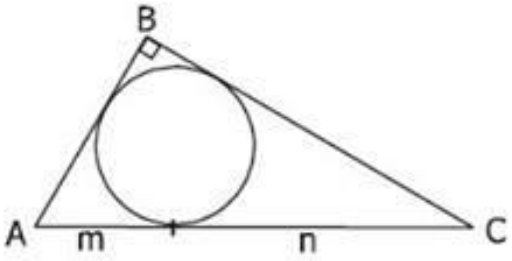
$$x = 2\sqrt{R\,r}$$



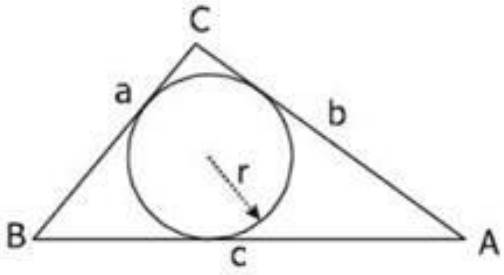
$$\sqrt[3]{a^2} + \sqrt[3]{b^2} = \sqrt[3]{c^2}$$

$$h^3 = abc$$

ÁREAS TRIANGULARES

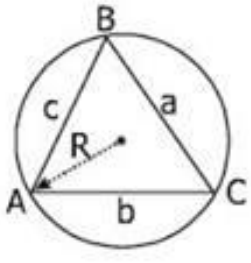


$$A_{\Delta ABC} = mn$$

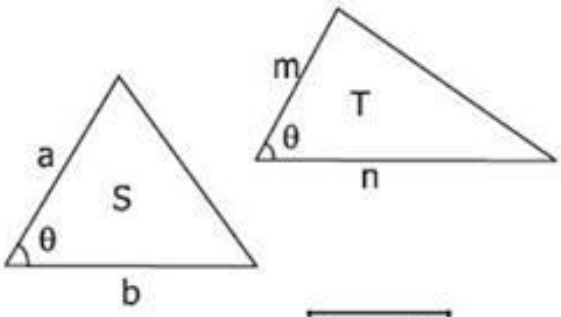


$$A_{\Delta ABC} = pr$$

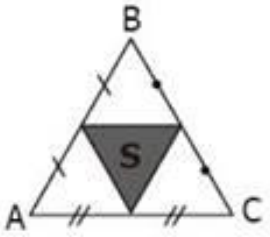
$$p = \frac{a+b+c}{2}$$



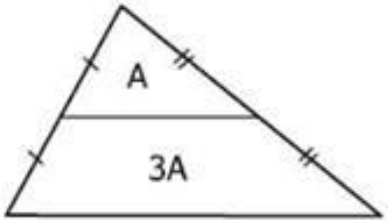
$$A_{\Delta ABC} = \frac{abc}{4R}$$



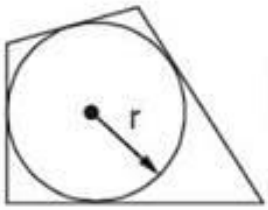
$$\frac{S}{T} = \frac{ab}{mn}$$



$$S = \frac{A_{\Delta ABC}}{4}$$

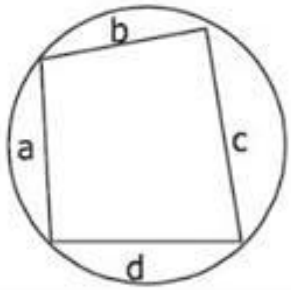


ÁREAS CUADRANGULARES



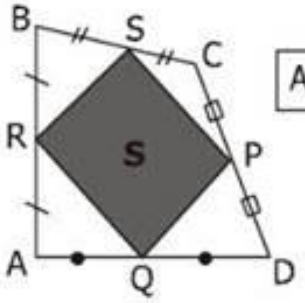
$A = p.r$

p: semiperimetro

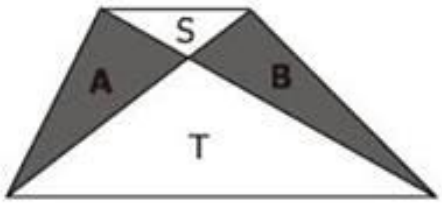


$$A = \sqrt{(p-a)(p-b)(p-c)(p-d)}$$

$$p = \frac{a+b+c+d}{2}$$



$A_{\square ABCD} = 2S$



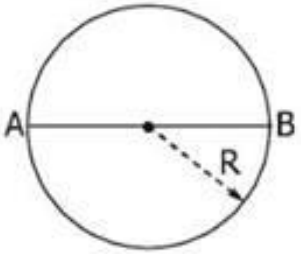
En todo trapecio:

$A = B$

$A \cdot B = S.\ T.$

ÁREA CIRCULAR

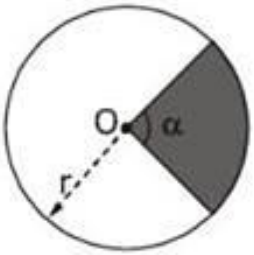
- Círculo:



$$S_{\bigcirc} = \pi R^2$$

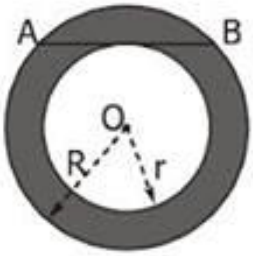
$$S_{\bigcirc} = \frac{\pi d^2}{4}$$

- Sector Circular



$$S = \frac{\alpha \pi R^2}{360}$$

- Corona Circular



$$S_{\circledcirc} = \pi(R^2 - r^2)$$

$$S_{\circledcirc} = \frac{\pi(\overline{AB})^2}{4}$$

GEOMETRÍA DEL ESPACIO Y POLIEDROS REGULARES

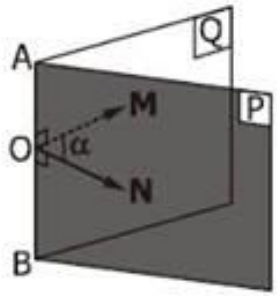
Teorema de Euler

$$C + V = A + 2$$

Donde:

C: N.° caras
V: N.° vértices
A: N.° aristas

Ángulo diedro



Notación:

diedro $\overline{AB}$ $(d\text{–}\overline{AB})$

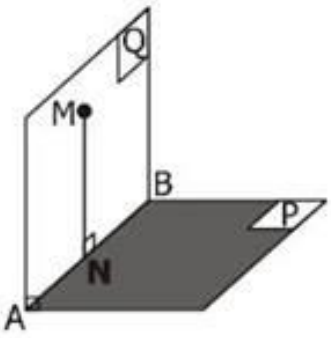
Elementos:

* Arista: $\overline{AB}$ *Caras: P y Q

* ∡ Plano: ∡MON

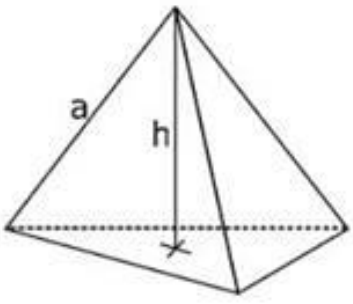
$$m(\text{diedro } \overline{AB}) = m\measuredangle MON = \alpha$$

Diedro recto o planos perpendiculares



$$\text{Si: } \begin{cases} \square P \perp \square Q \\ \overline{MN} \perp AB \Rightarrow \overline{MN} \perp \square P \\ \overline{MN} \subset \square Q \end{cases}$$

Tetraedro regular

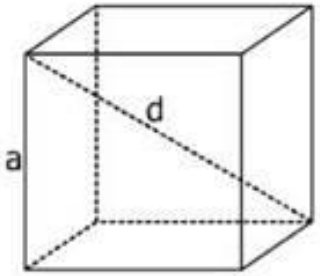


C = 4; V = 4; A = 6

$$A_T = a^2\sqrt{3} \; ; \; V = \frac{a^3}{12}\sqrt{2}$$

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

Hexaedro regular

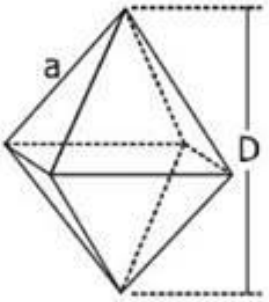


C = 6; V = 8; A = 12

$$A_T = 6\,a^2 \; ; \quad V = a^3$$

$$d = a\sqrt{3}$$

Octaedro regular



C = 8; V = 6; A = 12

$$A_T = 2a^2\sqrt{3} \; ; V = \frac{a^3\sqrt{2}}{3}$$

$$D = a\sqrt{2}$$

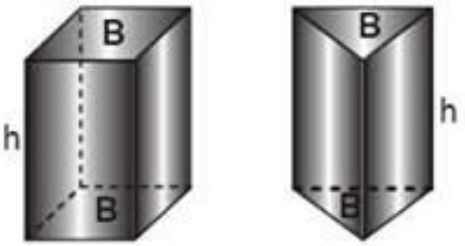
PRISMA Y CILINDRO

Cilindro recto

Fórmulas

1. $V = \pi r^2 g$
2. $A_L = 2\pi rg$
3. $A_T = 2\pi r(g + r)$

Prisma recto

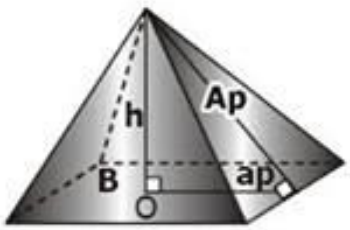


Fórmulas

1. $V = B.h$
2. $A_L = \left(\begin{matrix}\text{Perímetro de} \\ \text{la base}\end{matrix}\right).h$
3. $A_T = A_L + 2B$

PIRÁMIDE - CONO

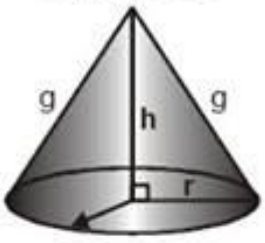
Pirámide regular



Fórmulas

1. $V = \dfrac{Bh}{3}$
2. $A_L = \left(\begin{matrix}\text{semiperímetro} \\ \text{de la base}\end{matrix}\right).Ap$
3. $A_T = A_L + B$ $\boxed{Ap^2 = h^2 + ap^2}$

Cono recto



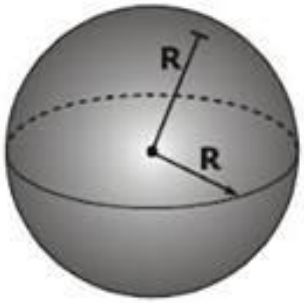
Fórmulas

1. $V = \dfrac{\pi r^2 h}{3}$
2. $A_L = \pi rg$
3. $A_T = \pi r(g + r)$

$\boxed{g^2 = h^2 + r^2}$

ESFERAS Y TEOREMA DE PAPPUS GULDIN

Esfera

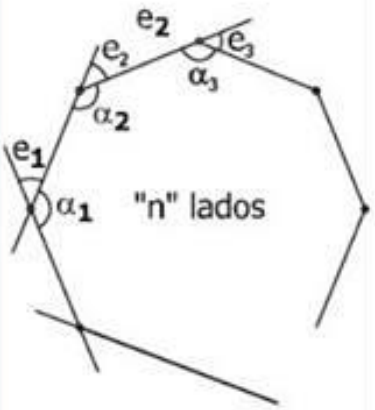


Fórmulas:

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

2. $A_T = 4\pi R^2$

POLÍGONOS Y POLIEDROS REGULARES



Fórmulas

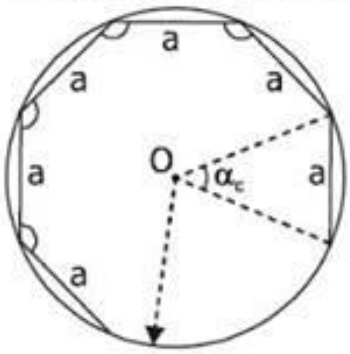
$Sm_{\sphericalangle i} = 180°(n-2)$

$Sm_{\sphericalangle e} = 360°$

N°Diagonales: N_D

$N°_D = \frac{n(n-3)}{2}$

Polígonos regulares



n: número de lados

Fórmulas

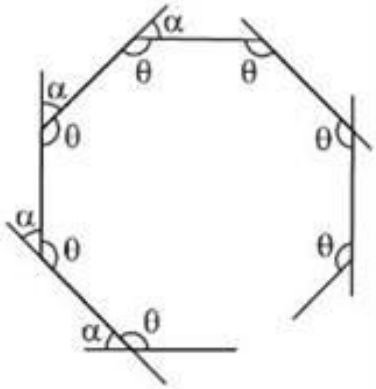
α_c : medida del ángulo central

$\alpha_c = \frac{360°}{n}$

$m_{1\sphericalangle_i} = \frac{180°(n-2)}{n}$

$m_{1\sphericalangle_e} = \frac{360°}{n}$

En todo polígono equiángulo:



Fórmulas

$\theta = 180° \frac{(n-2)}{n}$

$\alpha = \frac{360°}{n}$

VISITE NUESTRA PÁGINA EN FACEBOOK!!

https://web.facebook.com/Preparandote-Para-La-U-1785561948332382

Gracias por seguirnos; seguiremos trabajando para Usted.