HOJA
1

TEMA

TP6

DIAGRAMAS 3D

F.I.U.B.A.
DTO. ESTABILIDAD
84.02 /64.11
ESTABILIDAD 1

1 CUAT. 2020

CURSO 4
PARENTE

26 de JUNIO 2020

DIAGRAMAS 3D
TRABAJO PRÁCTICO Nº6

CURSO 4 – CARNICER – PARENTE

PRIMER CUAT. 2020
MODALIDAD ONLINE

depto. Estabilidad

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FACULTAD DE INGENIERÍA

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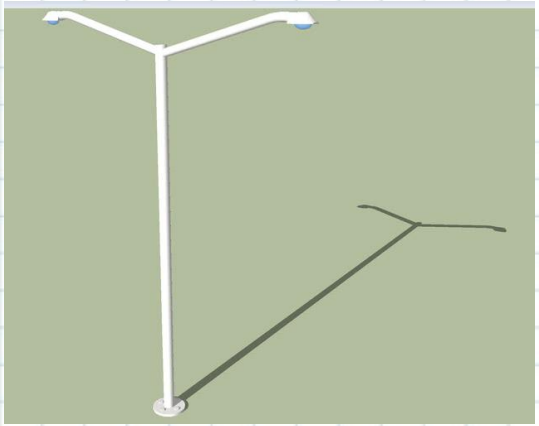
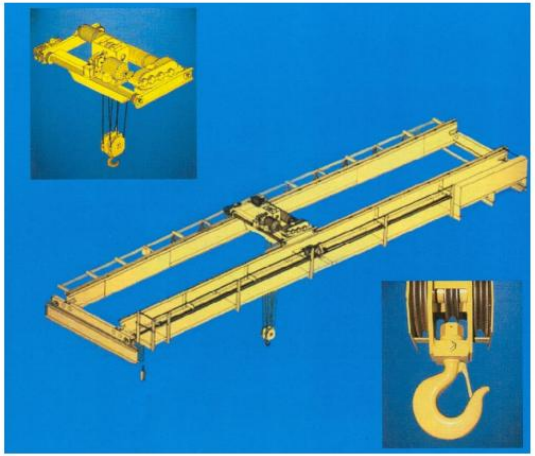
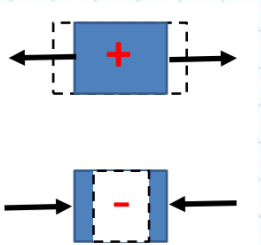
Estructuras espaciales



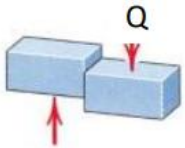


Estructuras espaciales

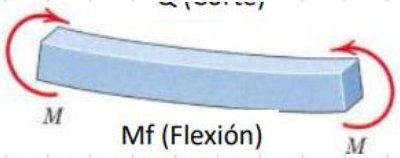
Solicitaciones



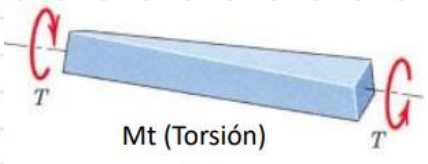
ESFUERZO AXIL



CORTE
EN DOS DIRECCIONES

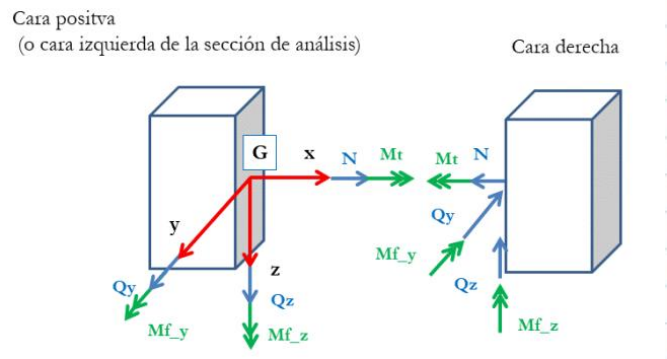


MOMENTO
EN DOS DIRECCIONES



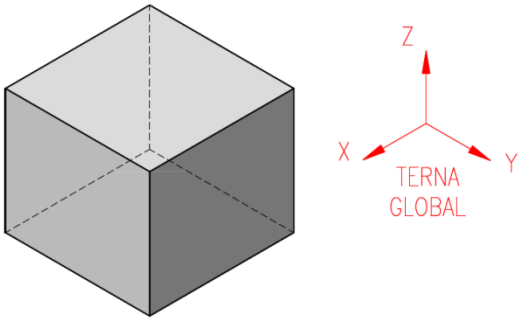
MOMENTO
TORSOR

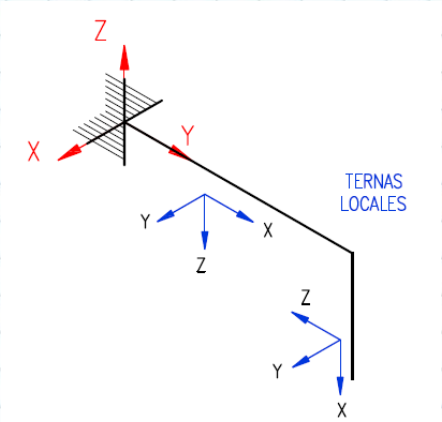
Solicitaciones en el espacio: 6
Terna local derecha.
Cara positiva: izquierda.

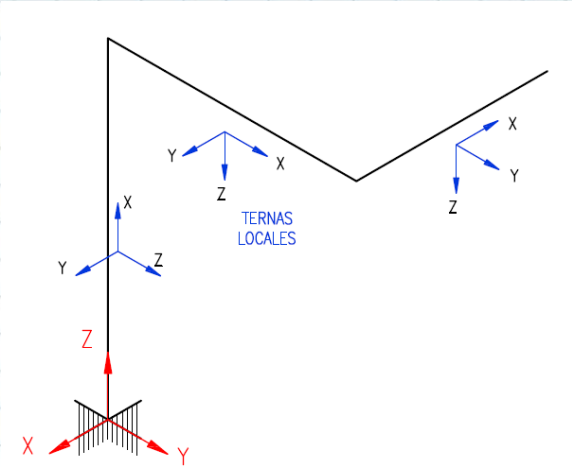


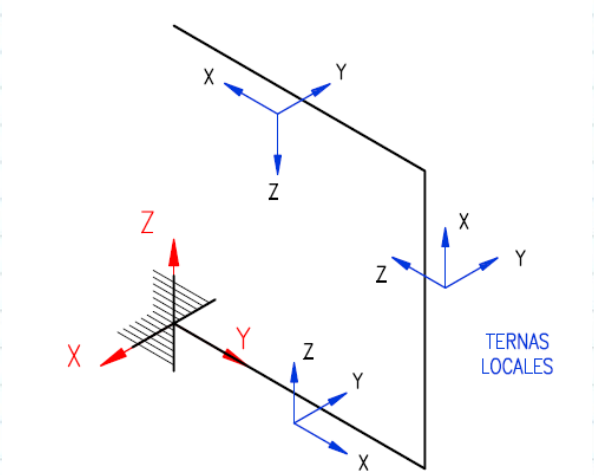
Estructuras espaciales

Ternas globales y locales



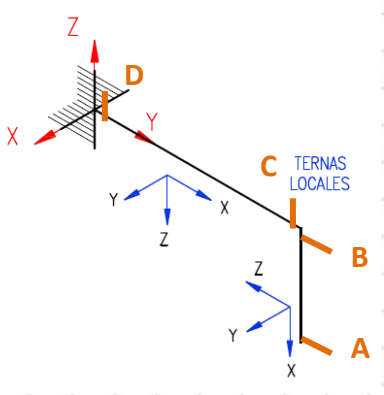


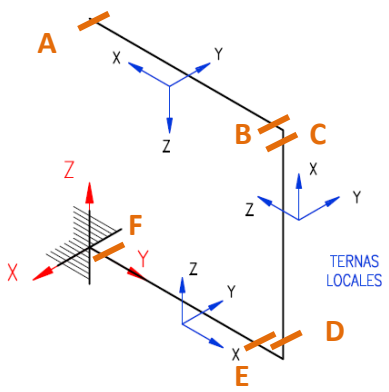


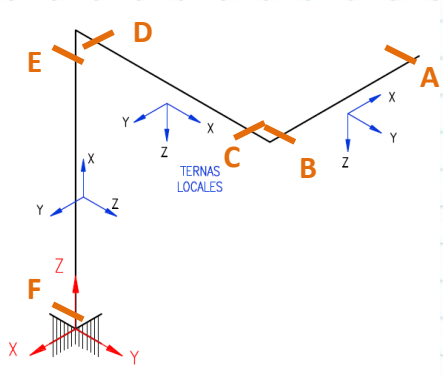


Estructuras espaciales

Una metodología de trabajo, armado de tabla de solicitaciones.







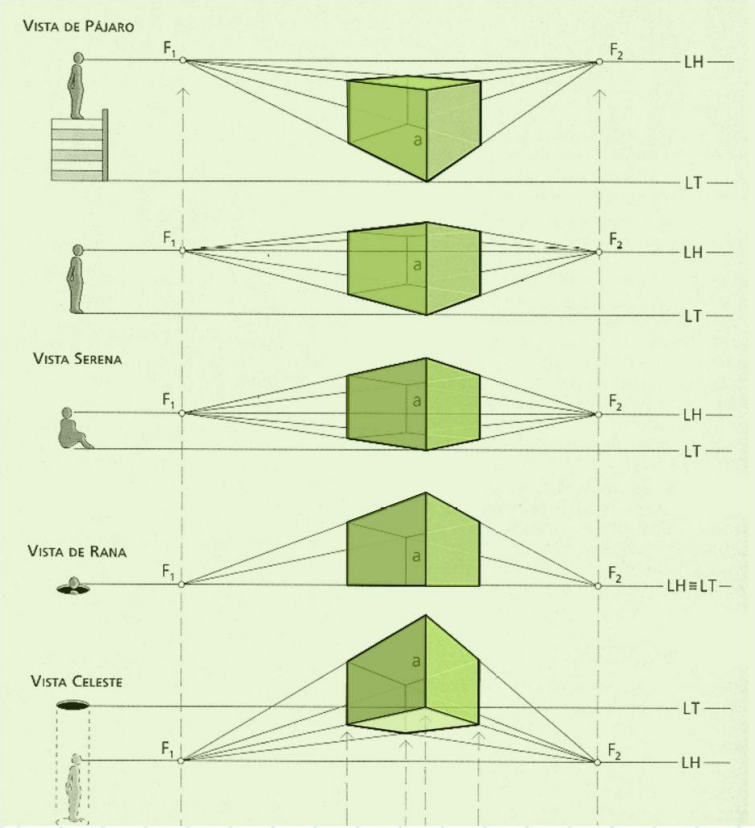
P	Nx	Qy	Qz	Mx	My	Mz
A						
B						
C						
D						
E						
F						

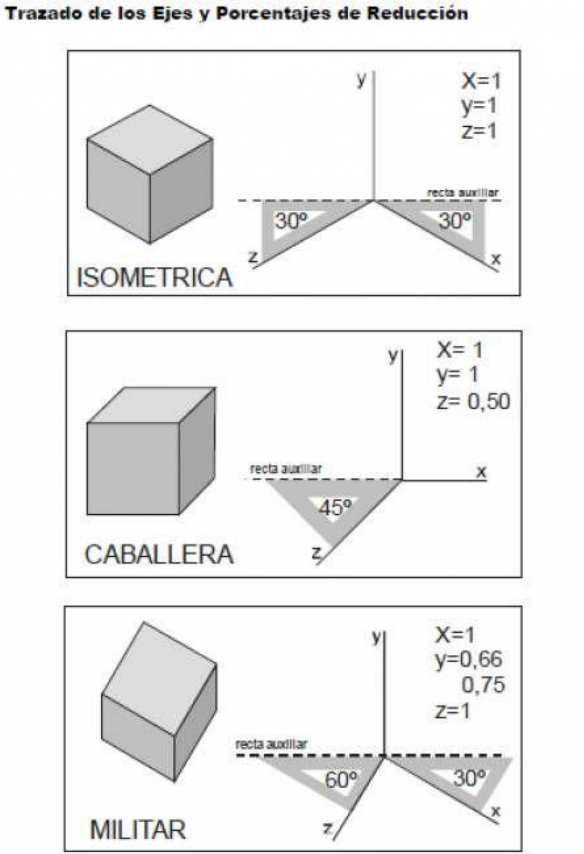
TODOS LOS ESFUERZOS REFERIDOS A LAS TERNAS LOCALES DE REFERENCIA. CALCULOS DE RESULTANTES A DERECHA COMPARADAS EN LA TERNA CORRESPONDIENTE.

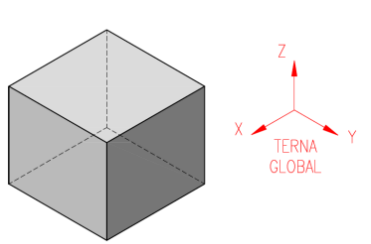
LA CANTIDAD DE PUNTOS A ELEGIR DEPENDE DEL PROBLEMA: GEOMETRIA Y CARGAS, Y DEL CONOCIMIENTO DE LAS VARIACIONES DE LAS SOLICITACIONES.

Estructuras espaciales

Representación

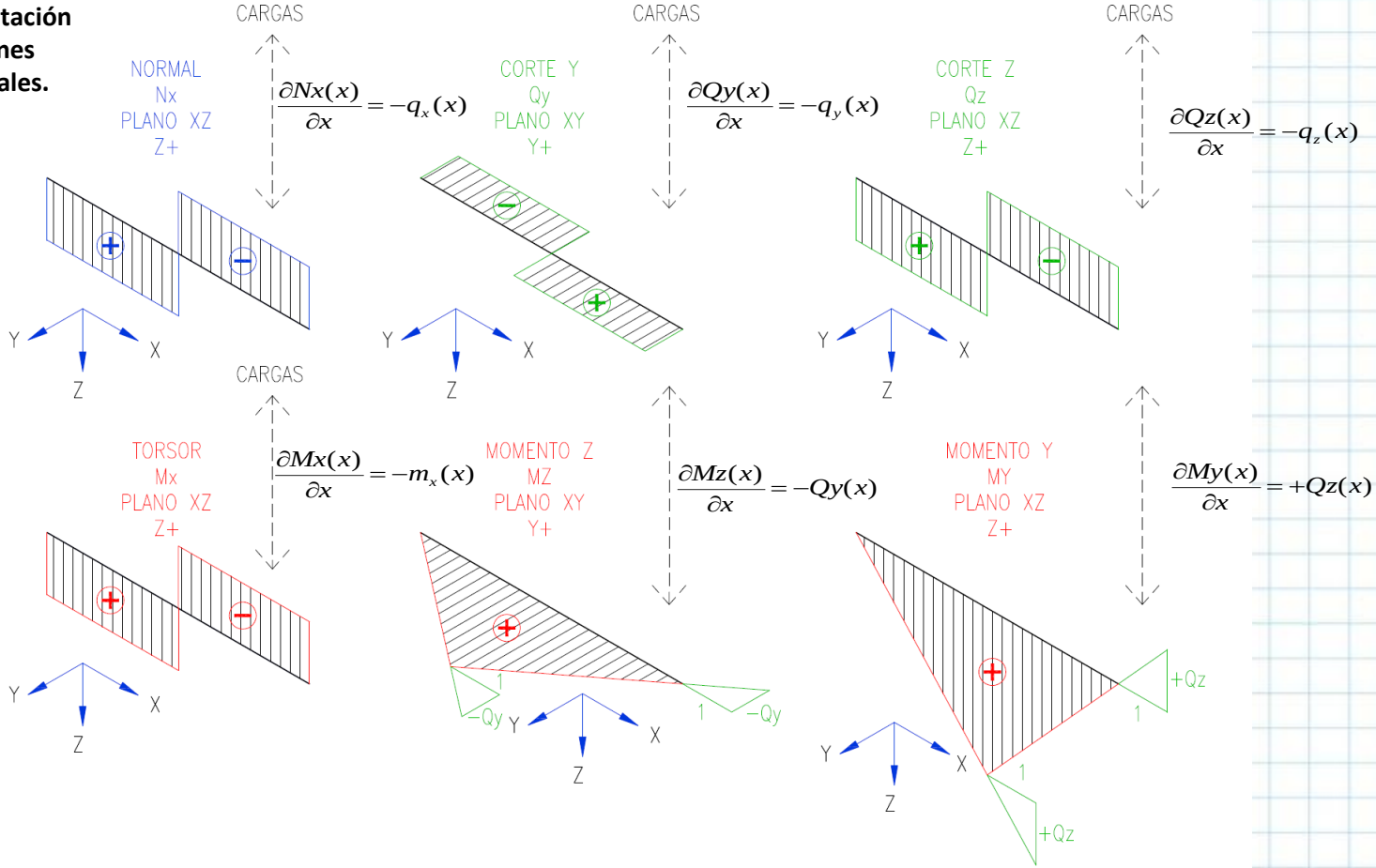






Estructuras espaciales

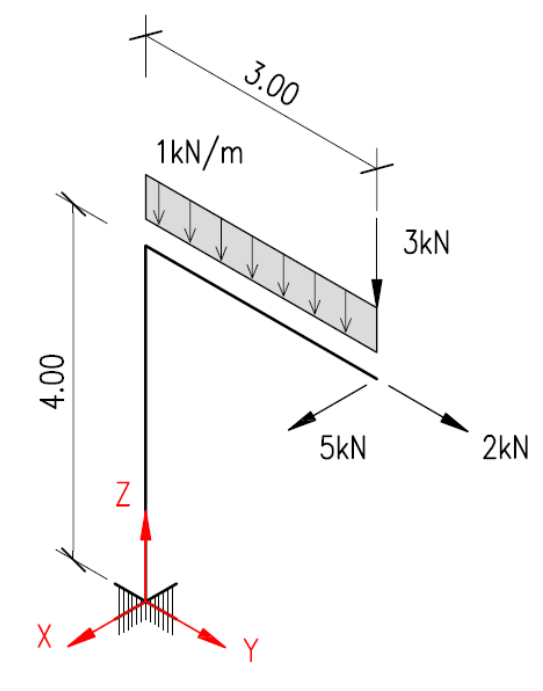
Representación y Relaciones Diferenciales.

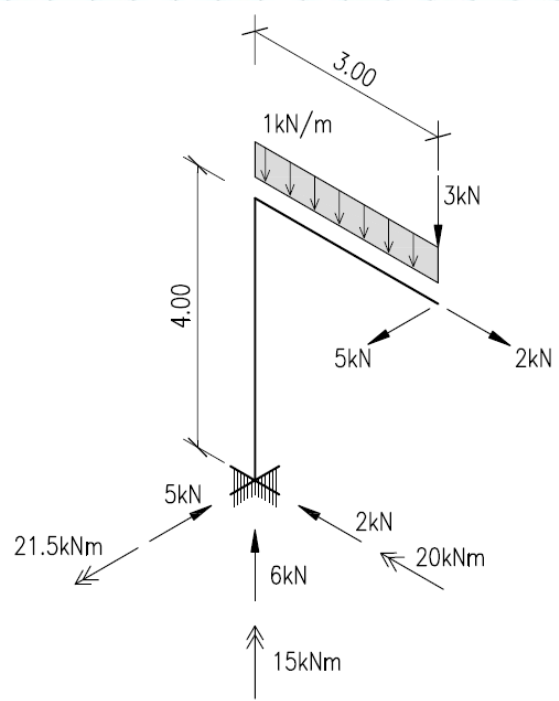


Ejercicio

Dada la siguiente estructura espacial realizar:

a) Análisis cinemático
b) RVE
c) Diagramas de características





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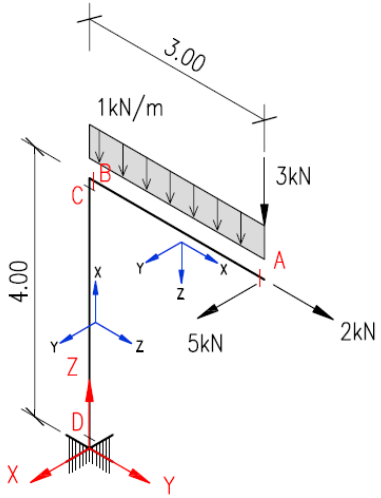
9

Ejercicio

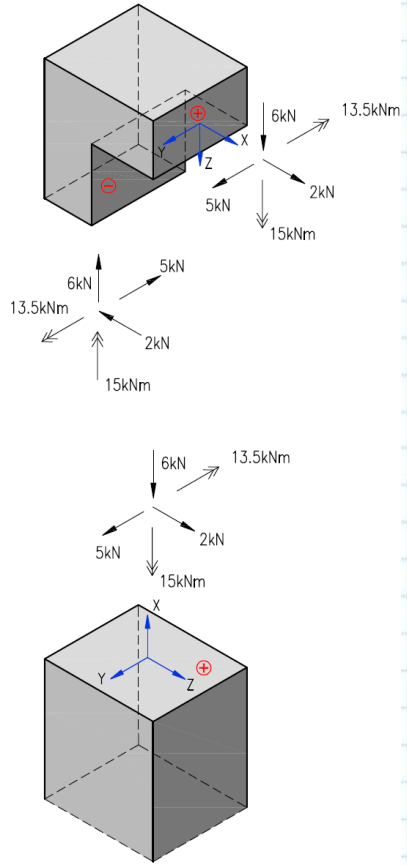
TEMA

TP6

DIAGRAMAS 3D



PUNTO	Nx [kN]	Qy [kN]	Qz [kN]	Mx[kNm]	My[kNm]	Mz[kNm]
A	2	5	3	0	0	0
B	2	5	6	0	−13.5	15
C	−6	5	2	−15	−13.5	0
D	−6	5	2	−15	−21.5	20



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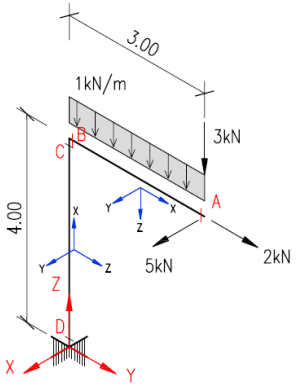
DIAGRAMAS
3D

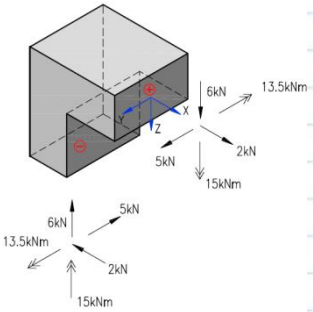
Ejercicio

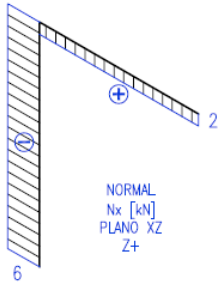
$$\frac{\partial Nx(x)}{\partial x} = -q_x(x) \qquad \frac{\partial Qy(x)}{\partial x} = -q_y(x) \qquad \frac{\partial Qz(x)}{\partial x} = -q_z(x)$$

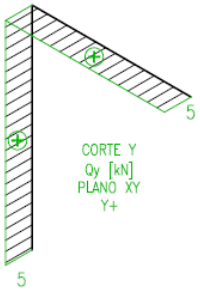
$$\frac{\partial Mx(x)}{\partial x} = -m_x(x) \qquad \frac{\partial Mz(x)}{\partial x} = -Qy(x) \qquad \frac{\partial My(x)}{\partial x} = +Qz(x)$$

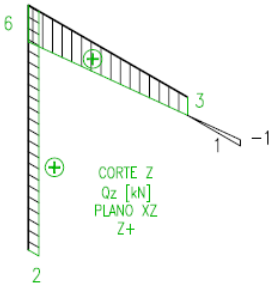


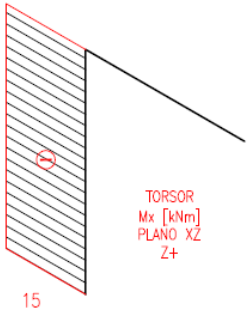
PUNTO	Nx [kN]	Qy [kN]	Qz [kN]	Mx[kNm]	My[kNm]	Mz[kNm]
A	2	5	3	0	0	0
B	2	5	6	0	−13.5	15
C	−6	5	2	−15	−13.5	0
D	−6	5	2	−15	−21.5	20

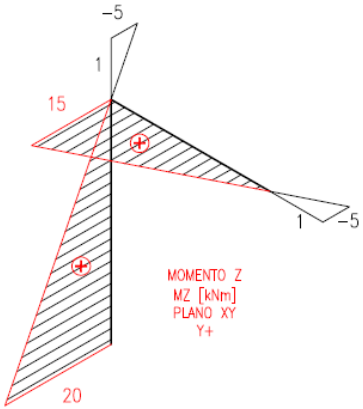


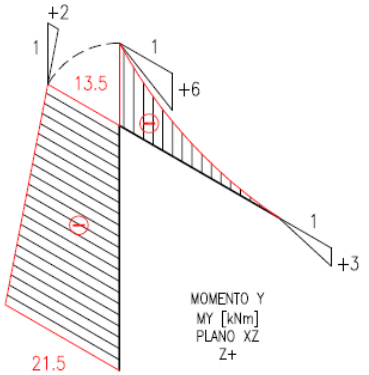












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