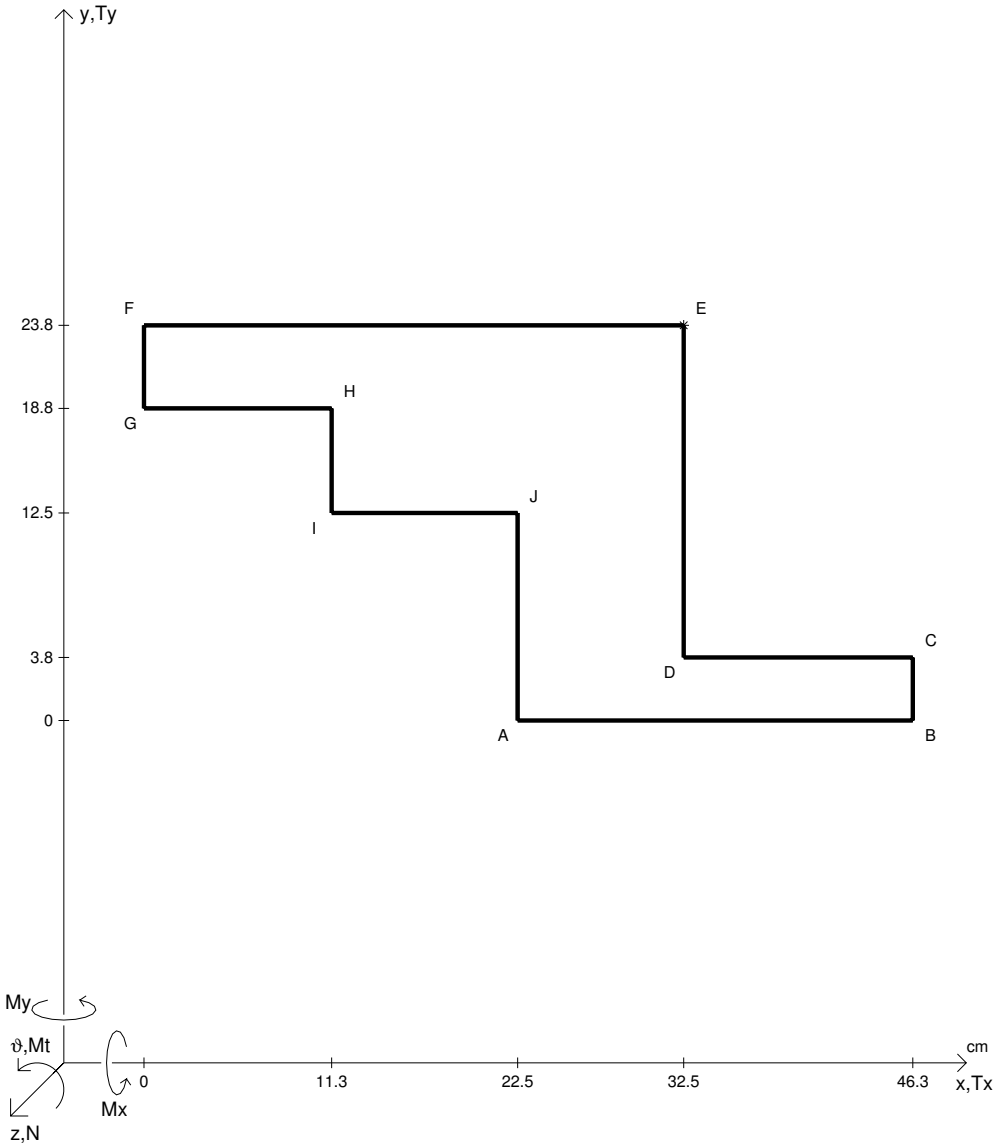
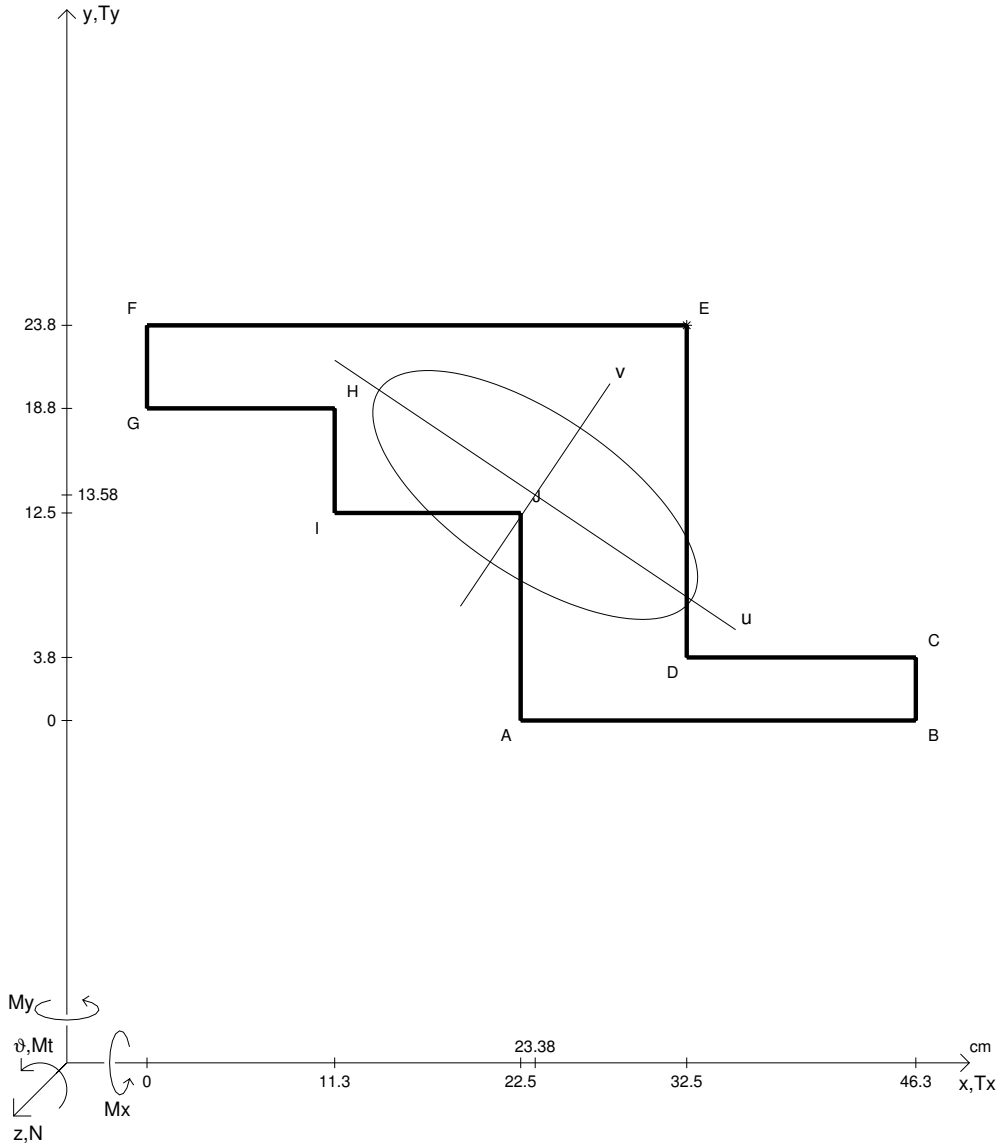


		N	= 385000 N	My	= -990000 Ncm	E	= 21000000 N/cm^2
		Mx	= 903000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

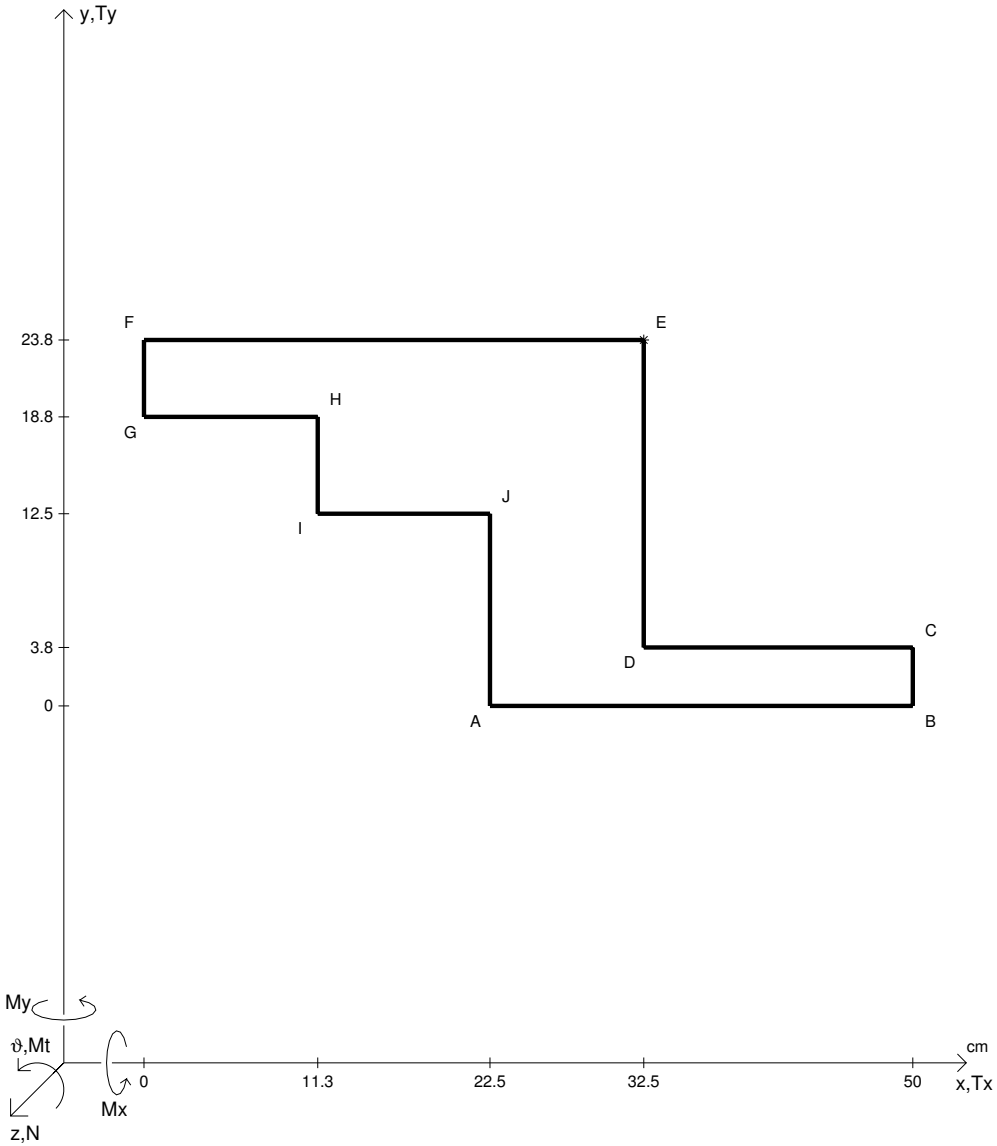
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.001



		N	= 385000 N	My	= -990000 Ncm	E	= 21000000 N/cm^2
		Mx	= 903000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 23.38 cm	Ju	= 11180 cm^4	σ	= 2403 N/cm^2	r_U	= 4.859 cm
y_G	= 13.58 cm	Jv	= 60732 cm^4	σ_I	= 2403 N/cm^2	r_V	= 11.33 cm
A_N	= 473.5 cm^2	α	= -.5918	σ_{II}	= 0 N/cm^2	r_O	= 12.32 cm
Jxx	= 26598 cm^4	σ(N)	= 813.1 N/cm^2	σ_{MISES}	= 2403 N/cm^2		
Jyy	= 45313 cm^4	σ(Mx)	= 894 N/cm^2	σ_{GUEST}	= 2403 N/cm^2		
Jxy	= -22941 cm^4	σ(My)	= 695.5 N/cm^2	σ_{ID}	= 2403 N/cm^2		

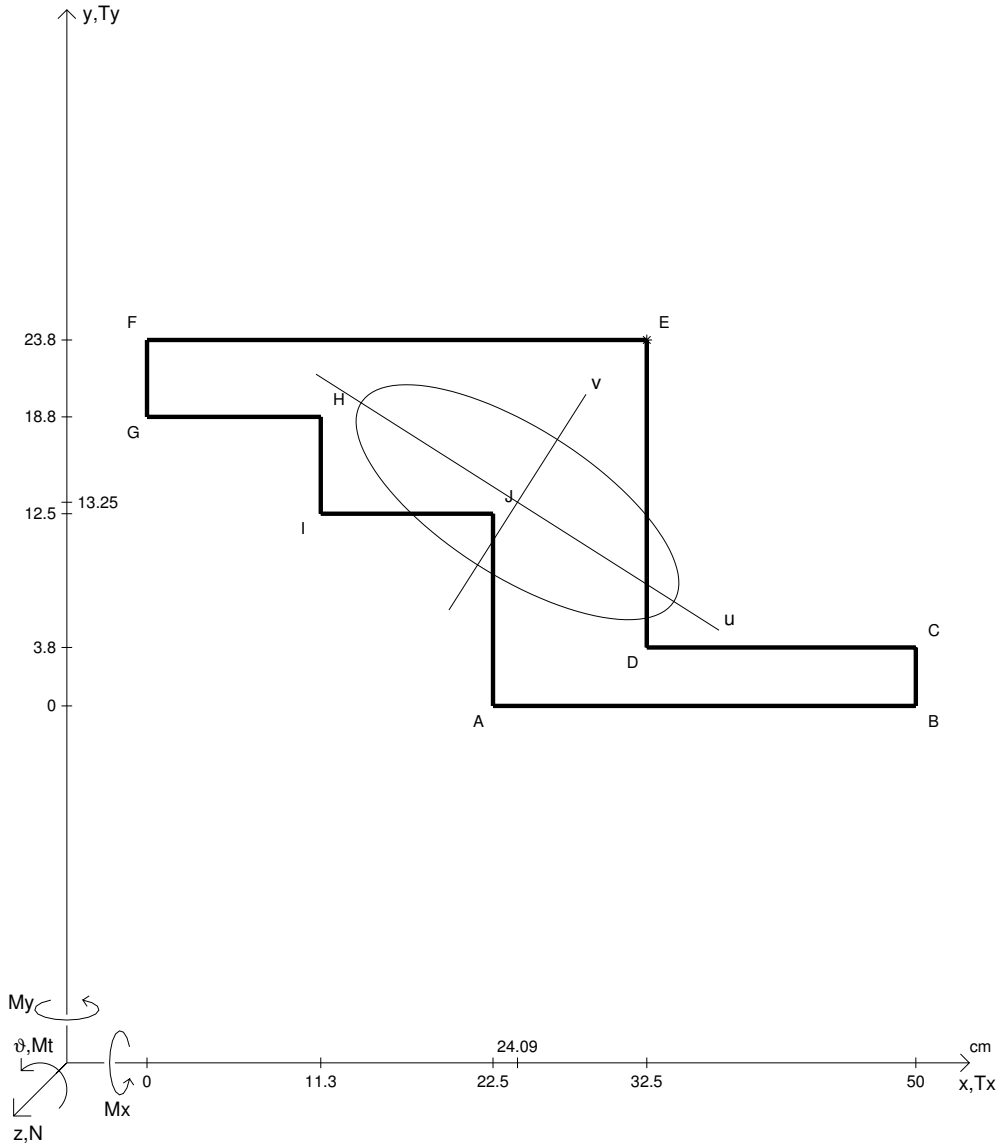
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 432000 N	My	= -1210000 Ncm	E	= 21000000 N/cm^2
		Mx	= 738000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

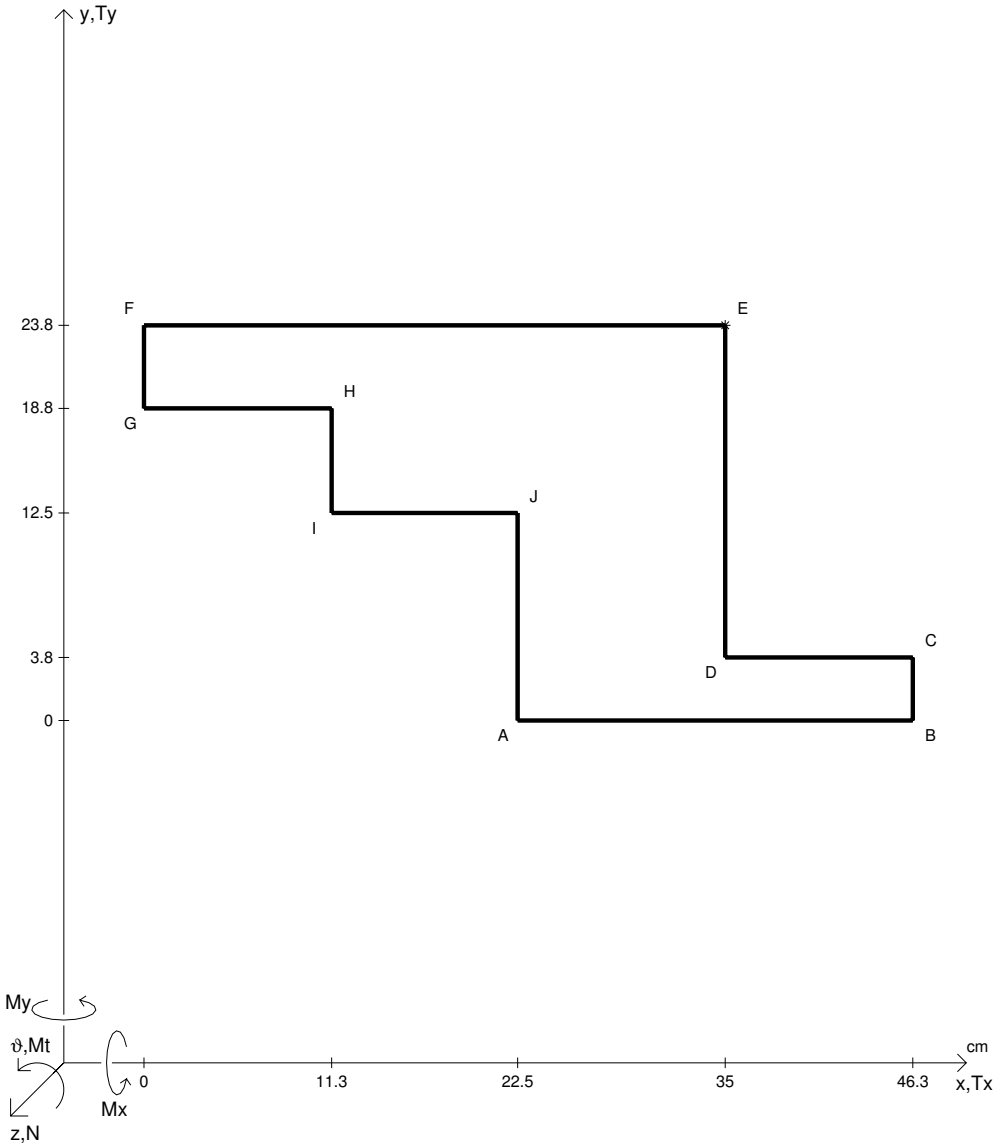
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.002



		N	= 432000 N	My	= -1210000 Ncm	E	= 21000000 N/cm^2
		Mx	= 738000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 24.09 cm	Ju	= 11389 cm^4	σ	= 2397 N/cm^2	r_U	= 4.833 cm
y_G	= 13.25 cm	Jv	= 70799 cm^4	σ_I	= 2397 N/cm^2	r_V	= 12.05 cm
A_N	= 487.6 cm^2	α	= -.5661	σ_{II}	= 0 N/cm^2	r_O	= 12.98 cm
Jxx	= 28479 cm^4	σ(N)	= 886 N/cm^2	σ_{MISES}	= 2397 N/cm^2		
Jyy	= 53709 cm^4	σ(Mx)	= 725.7 N/cm^2	σ_{GUEST}	= 2397 N/cm^2		
Jxy	= -26893 cm^4	σ(My)	= 785.2 N/cm^2	σ_{ID}	= 2397 N/cm^2		

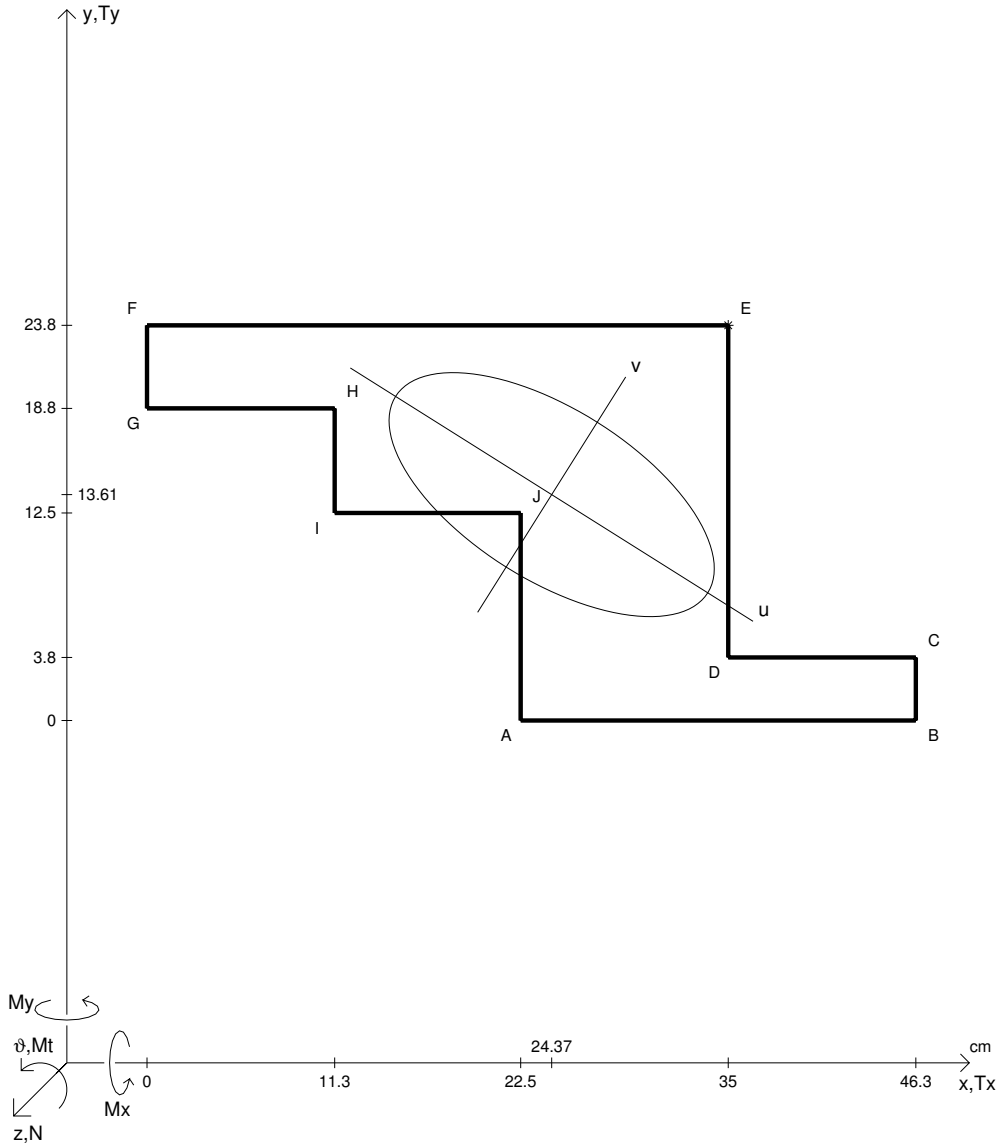
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 385000 N	My	= -1410000 Ncm	E	= 21000000 N/cm^2
		Mx	= 972000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

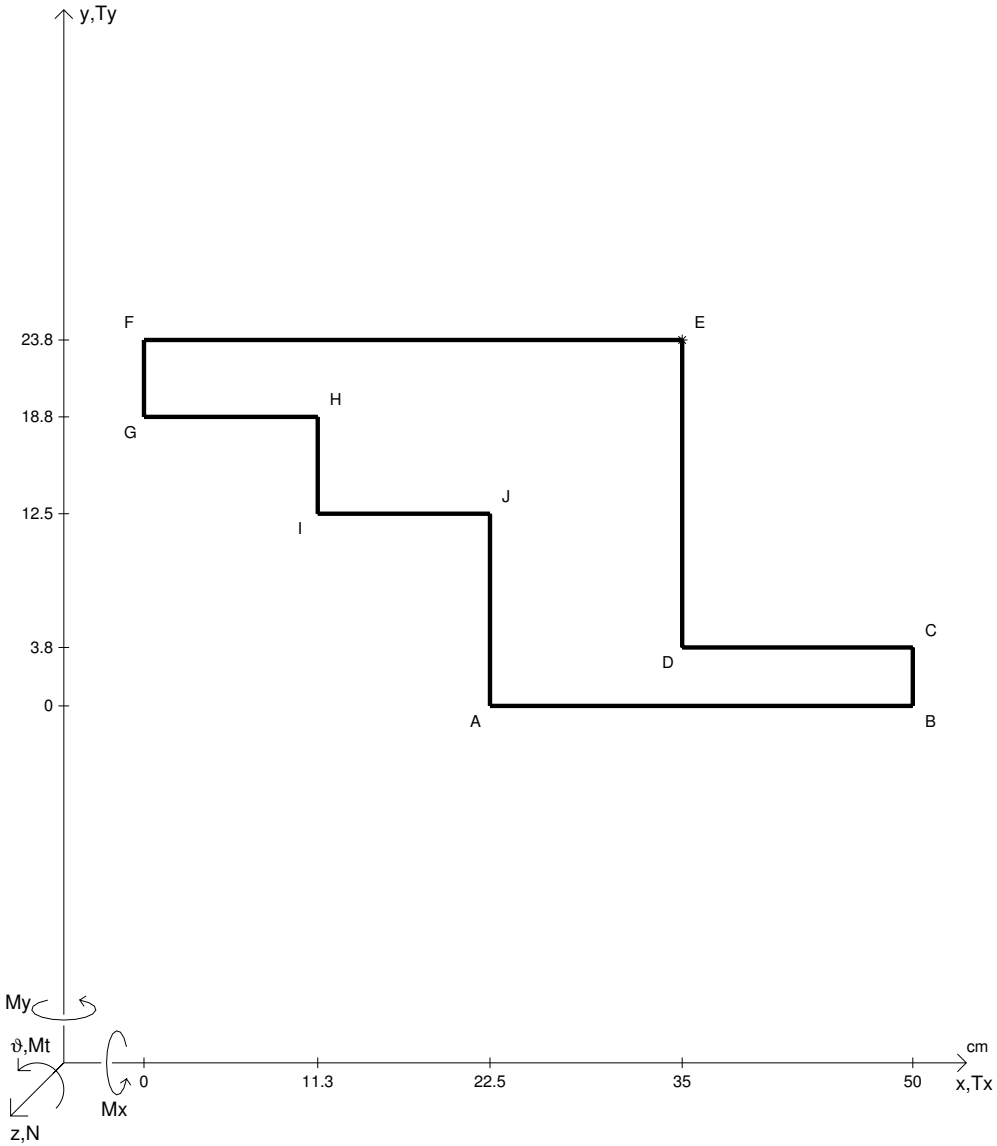
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.003



		N	= 385000 N	My	= -1410000 Ncm	E	= 21000000 N/cm^2
		Mx	= 972000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 24.37 cm	Ju	= 13899 cm^4	σ	= 2391 N/cm^2	r_U	= 5.153 cm
y_G	= 13.61 cm	Jv	= 64573 cm^4	σ_I	= 2391 N/cm^2	r_V	= 11.11 cm
A_N	= 523.5 cm^2	α	= -.5615	σ_{II}	= 0 N/cm^2	r_O	= 12.24 cm
Jxx	= 28267 cm^4	σ(N)	= 735.4 N/cm^2	σ_{MISES}	= 2391 N/cm^2		
Jyy	= 50205 cm^4	σ(Mx)	= 817.3 N/cm^2	σ_{GUEST}	= 2391 N/cm^2		
Jxy	= -22840 cm^4	σ(My)	= 838 N/cm^2	σ_{ID}	= 2391 N/cm^2		

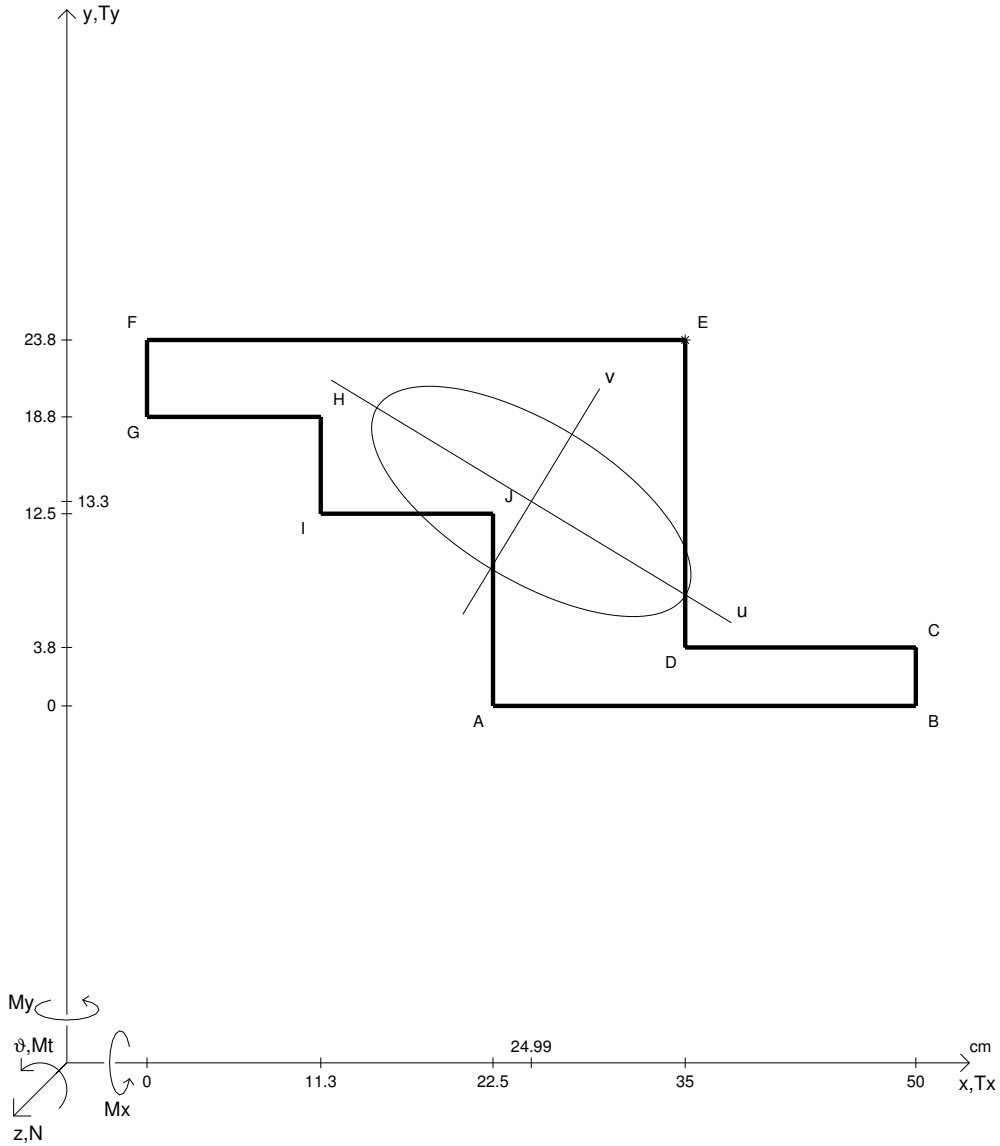
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 436000 N	My	= -1240000 Ncm	E	= 21000000 N/cm^2
		Mx	= 1050000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

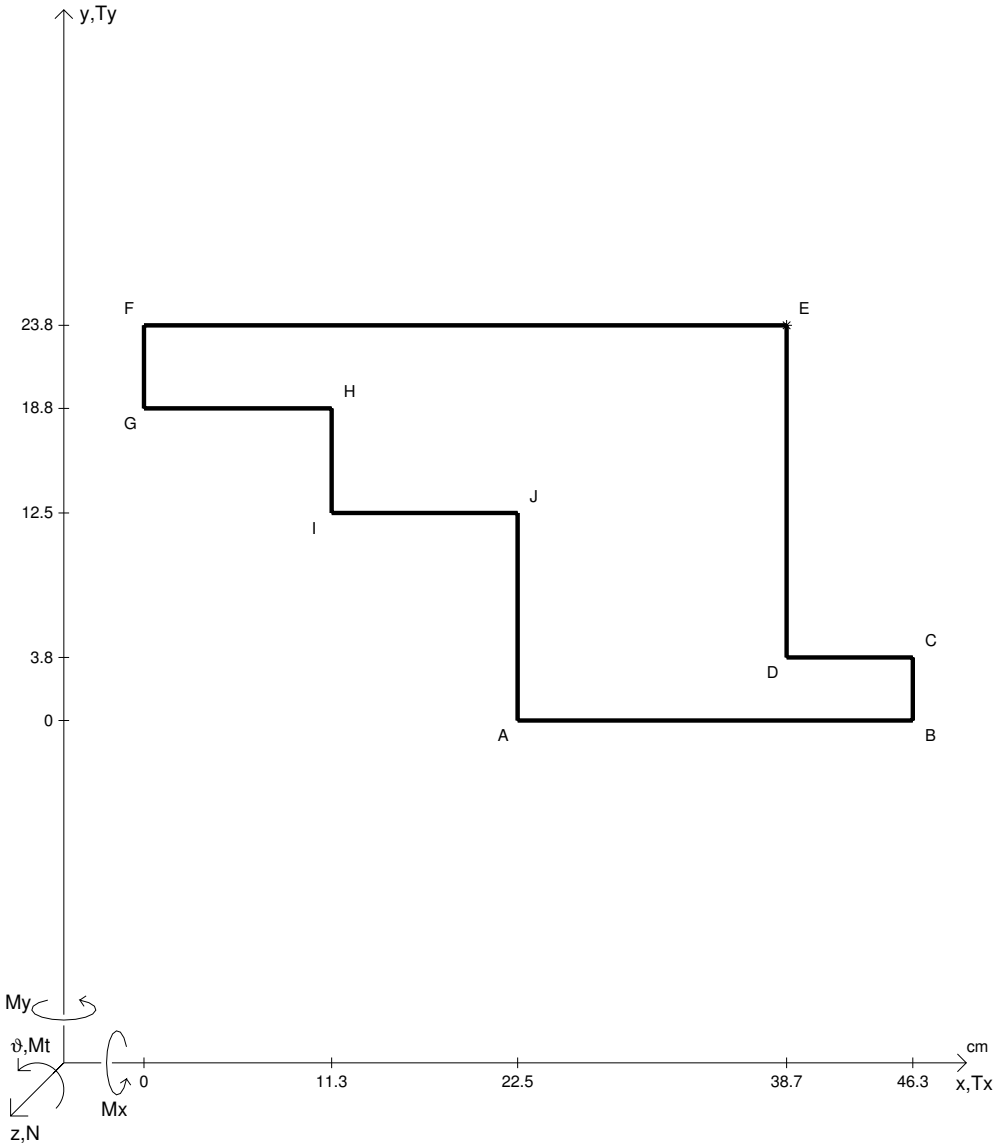
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.004



		N	= 436000 N	My	= -1240000 Ncm	E	= 21000000 N/cm^2
		Mx	= 1050000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 24.99 cm	Ju	= 14003 cm^4	σ	= 2392 N/cm^2	r_U	= 5.104 cm
y_G	= 13.3 cm	Jv	= 74122 cm^4	σ_I	= 2392 N/cm^2	r_V	= 11.74 cm
A_N	= 537.6 cm^2	α	= -.545	σ_{II}	= 0 N/cm^2	r_O	= 12.8 cm
Jxx	= 30160 cm^4	σ(N)	= 811.1 N/cm^2	σ_{MISES}	= 2392 N/cm^2		
Jyy	= 57965 cm^4	σ(Mx)	= 885.7 N/cm^2	σ_{GUEST}	= 2392 N/cm^2		
Jxy	= -26651 cm^4	σ(My)	= 695 N/cm^2	σ_{ID}	= 2392 N/cm^2		

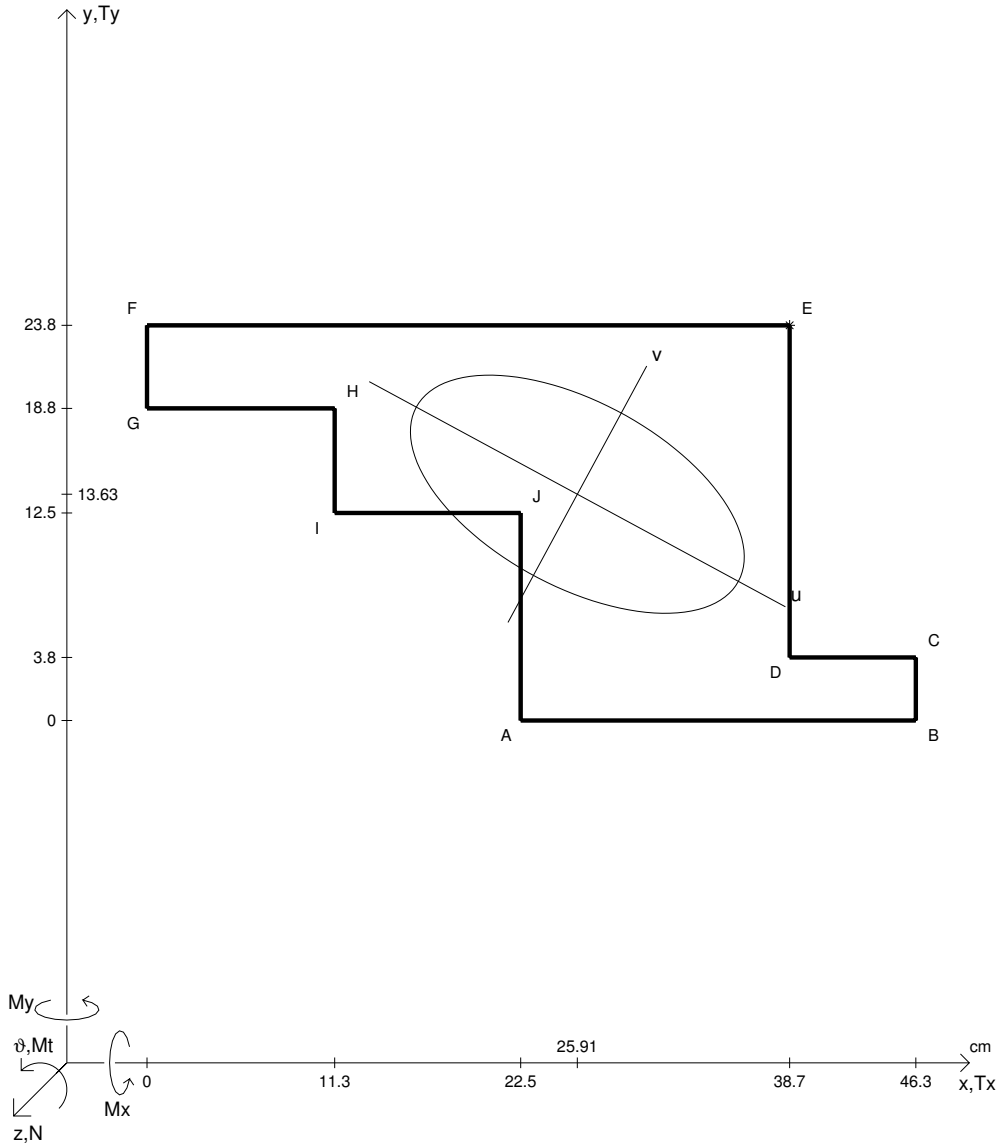
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 540000 N	My	= -1620000 Ncm	E	= 21000000 N/cm^2
		Mx	= 1090000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

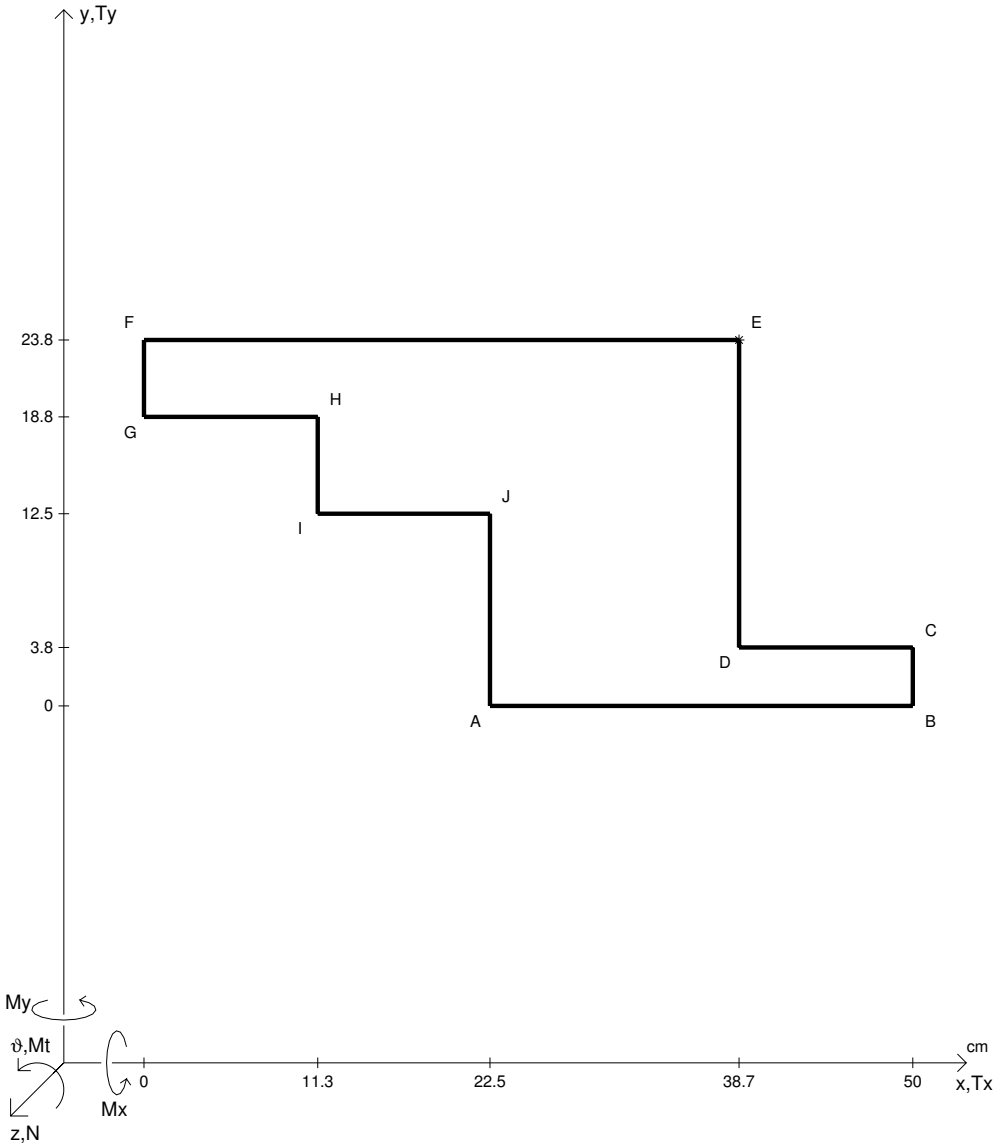
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.005



		N	= 540000 N	My	= -1620000 Ncm	E	= 21000000 N/cm^2
		Mx	= 1090000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 25.91 cm	Ju	= 18465 cm^4	σ	= 2391 N/cm^2	r_U	= 5.559 cm
y_G	= 13.63 cm	Jv	= 72662 cm^4	σ_I	= 2391 N/cm^2	r_V	= 11.03 cm
A_N	= 597.5 cm^2	α	= -.4959	σ_{II}	= 0 N/cm^2	r_O	= 12.35 cm
Jxx	= 30736 cm^4	σ(N)	= 903.8 N/cm^2	σ_{MISES}	= 2391 N/cm^2		
Jyy	= 60390 cm^4	σ(Mx)	= 734.6 N/cm^2	σ_{GUEST}	= 2391 N/cm^2		
Jxy	= -22682 cm^4	σ(My)	= 753.1 N/cm^2	σ_{ID}	= 2391 N/cm^2		

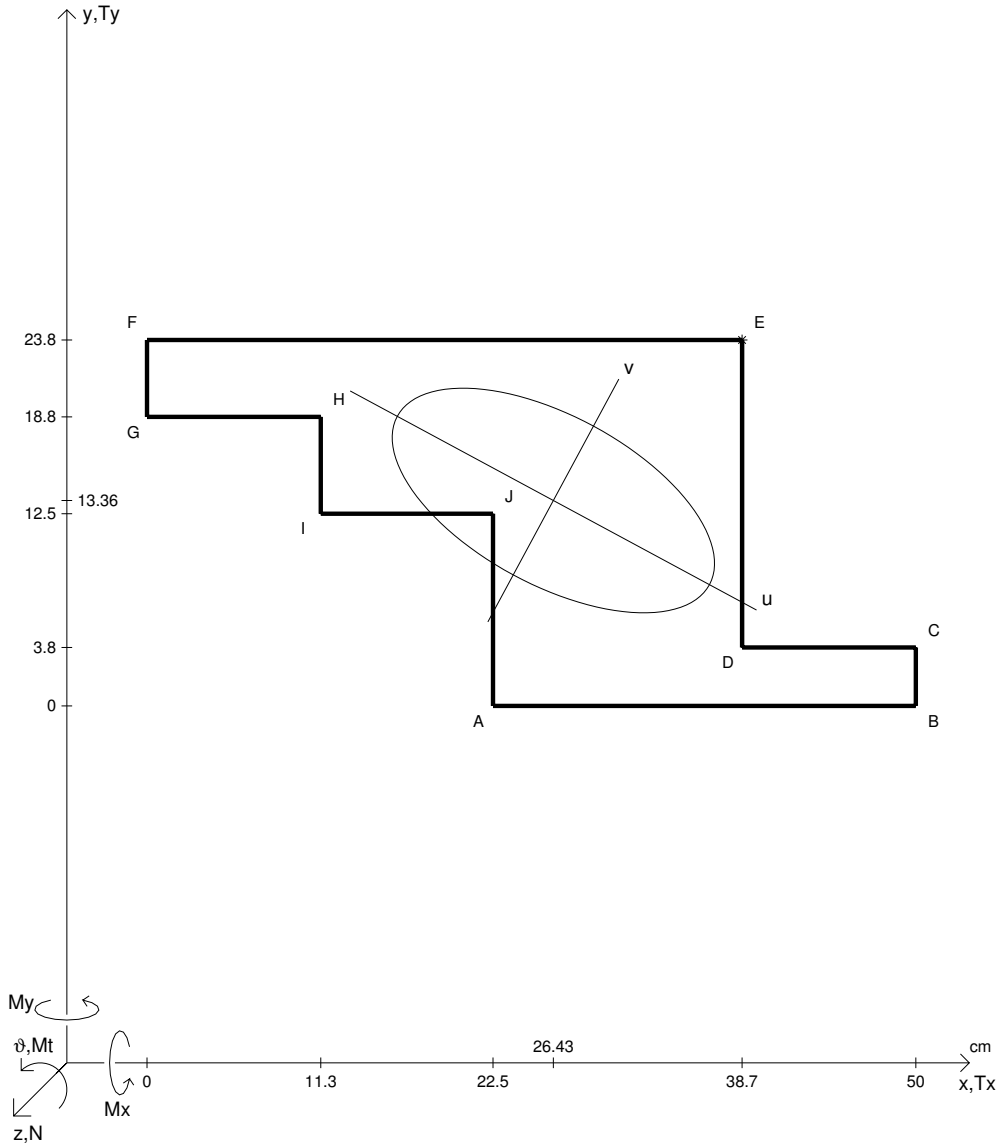
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 449000 N	My	= -1870000 Ncm	E	= 21000000 N/cm^2
		Mx	= 1190000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

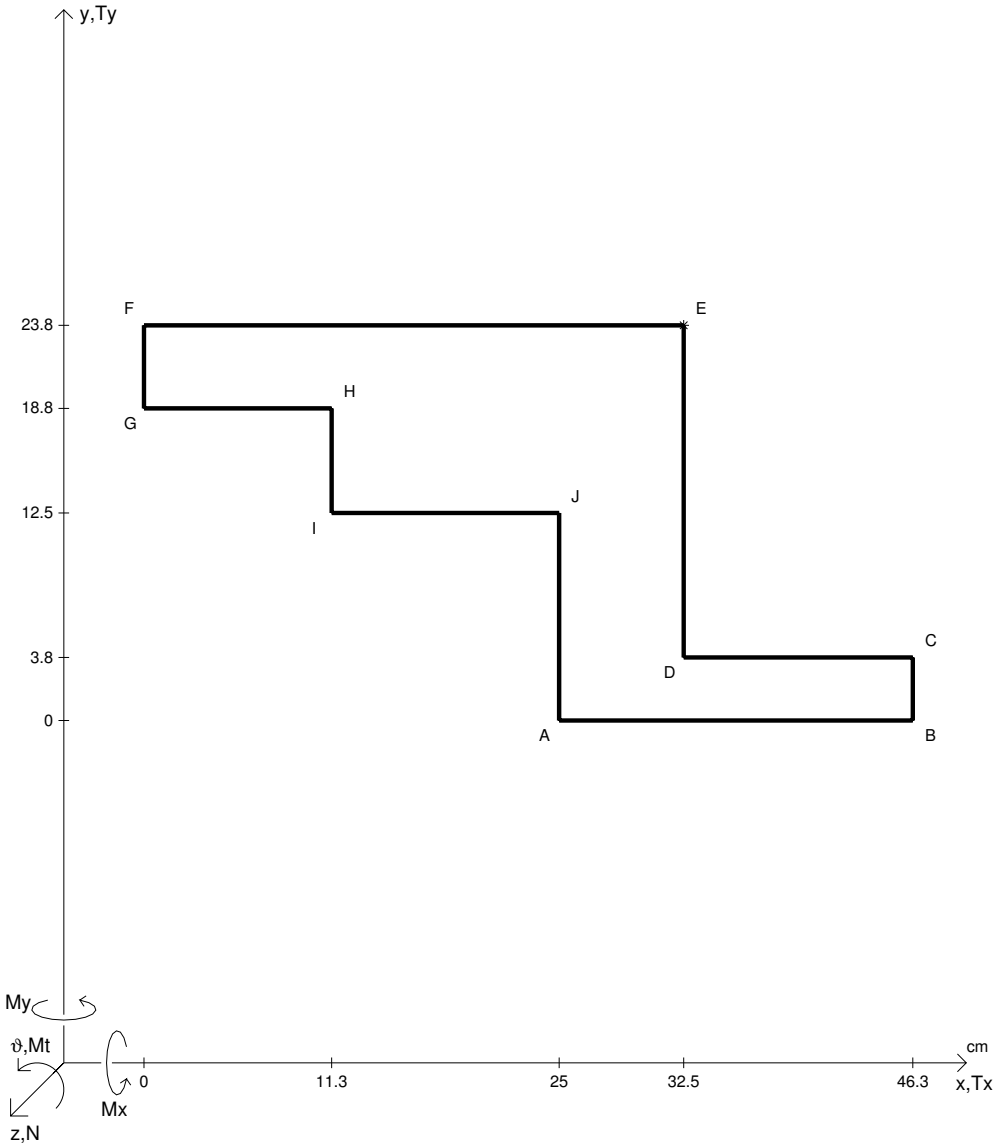
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.006



		N	= 449000 N	My	= -1870000 Ncm	E	= 21000000 N/cm^2
		Mx	= 1190000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 26.43 cm	Ju	= 18482 cm^4	σ	= 2384 N/cm^2	r_U	= 5.497 cm
y_G	= 13.36 cm	Jv	= 81359 cm^4	σ_I	= 2384 N/cm^2	r_V	= 11.53 cm
A_N	= 611.6 cm^2	α	= -.4945	σ_{II}	= 0 N/cm^2	r_O	= 12.78 cm
Jxx	= 32643 cm^4	σ(N)	= 734.2 N/cm^2	σ_{MISES}	= 2384 N/cm^2		
Jyy	= 67198 cm^4	σ(Mx)	= 810.4 N/cm^2	σ_{GUEST}	= 2384 N/cm^2		
Jxy	= -26265 cm^4	σ(My)	= 839.3 N/cm^2	σ_{ID}	= 2384 N/cm^2		

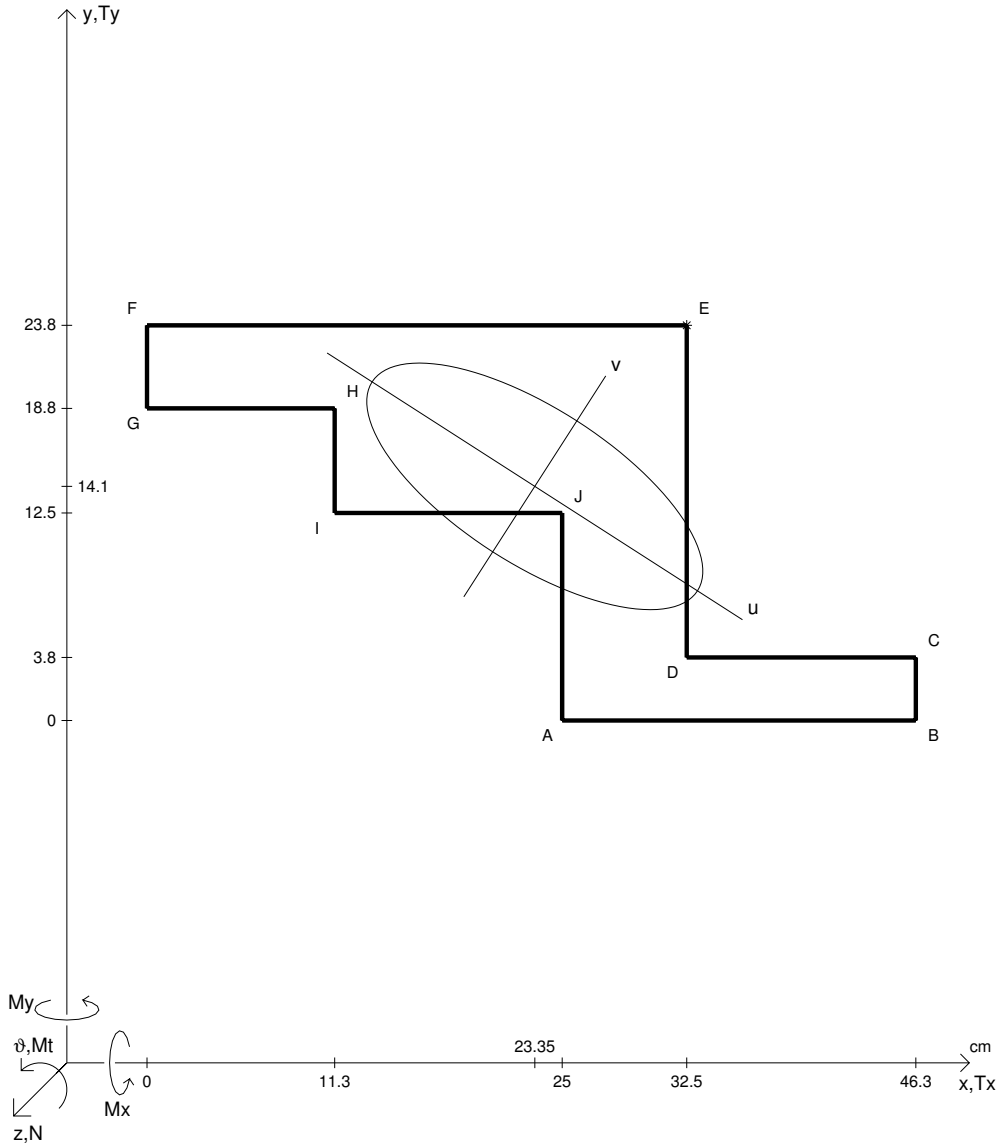
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 358000 N	My	= -919000 Ncm	E	= 21000000 N/cm^2
		Mx	= 801000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

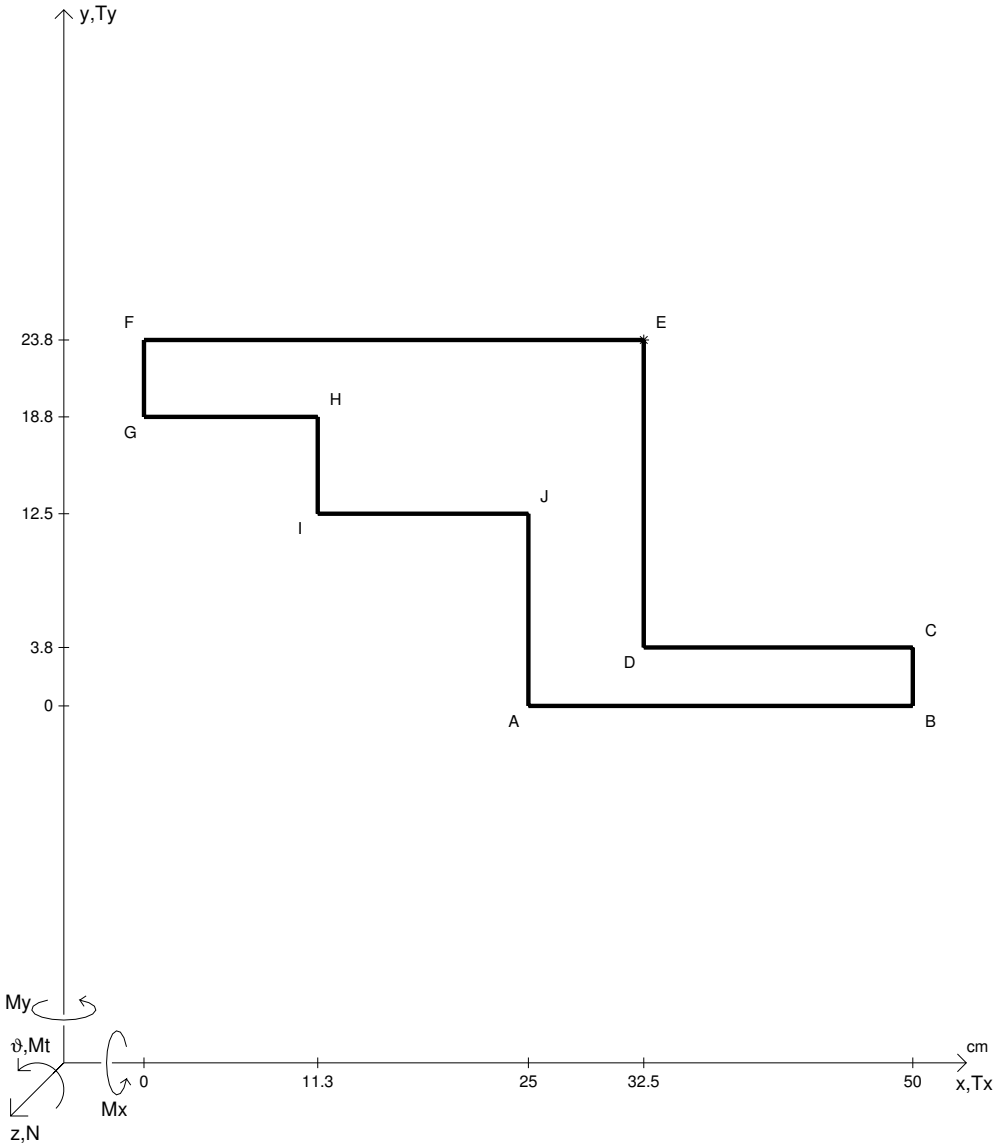
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.007



		N	= 358000 N	My	= -919000 Ncm	E	= 21000000 N/cm^2
		Mx	= 801000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 23.35 cm	Ju	= 9716 cm^4	σ	= 2402 N/cm^2	r_U	= 4.687 cm
y_G	= 14.1 cm	Jv	= 59968 cm^4	σ_I	= 2402 N/cm^2	r_V	= 11.64 cm
A_N	= 442.3 cm^2	α	= -.5709	σ_{II}	= 0 N/cm^2	r_O	= 12.55 cm
Jxx	= 24391 cm^4	σ(N)	= 809.5 N/cm^2	σ_{MISES}	= 2402 N/cm^2		
Jyy	= 45292 cm^4	σ(Mx)	= 891.2 N/cm^2	σ_{GUEST}	= 2402 N/cm^2		
Jxy	= -22850 cm^4	σ(My)	= 701.5 N/cm^2	σ_{ID}	= 2402 N/cm^2		

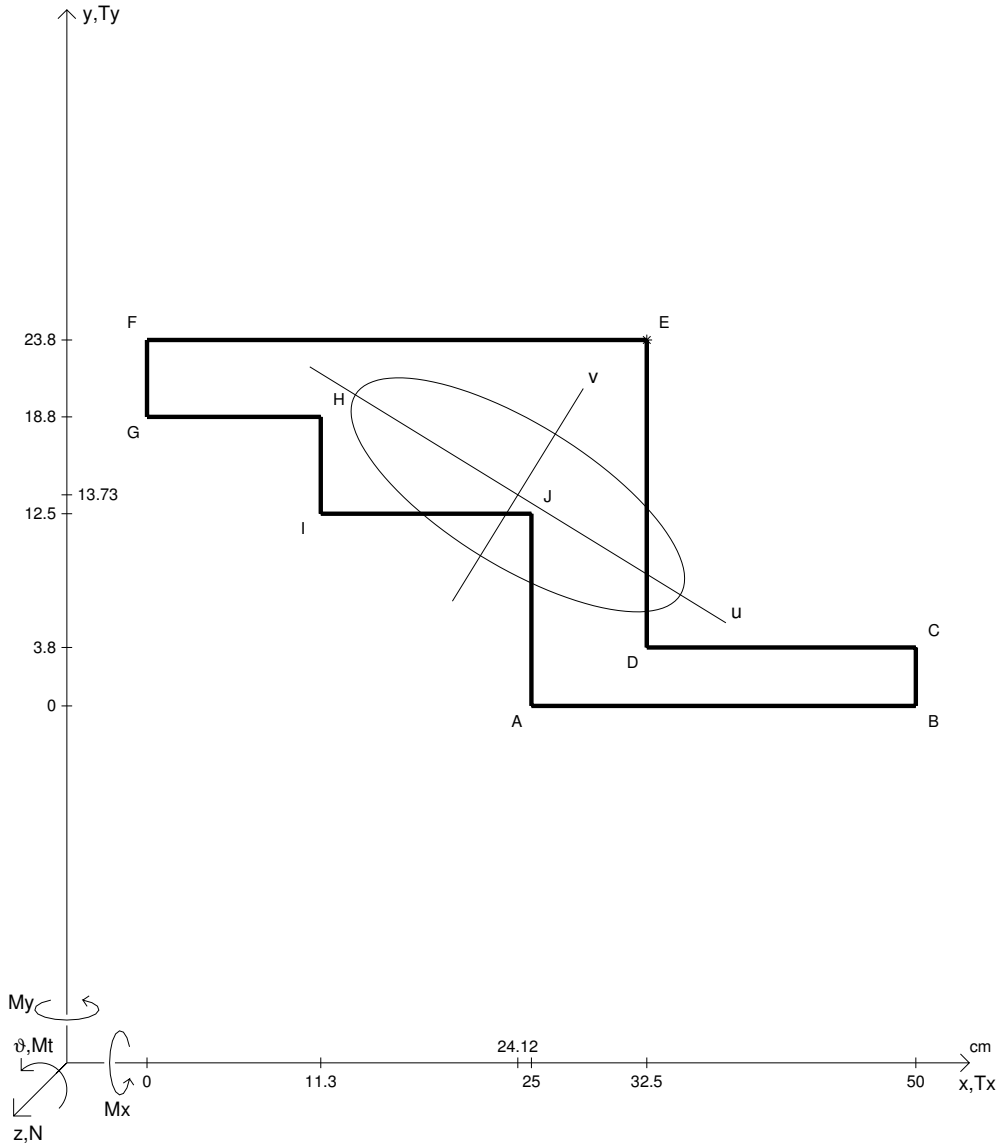
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 403000 N	My	= -1110000 Ncm	E	= 21000000 N/cm^2
		Mx	= 652000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

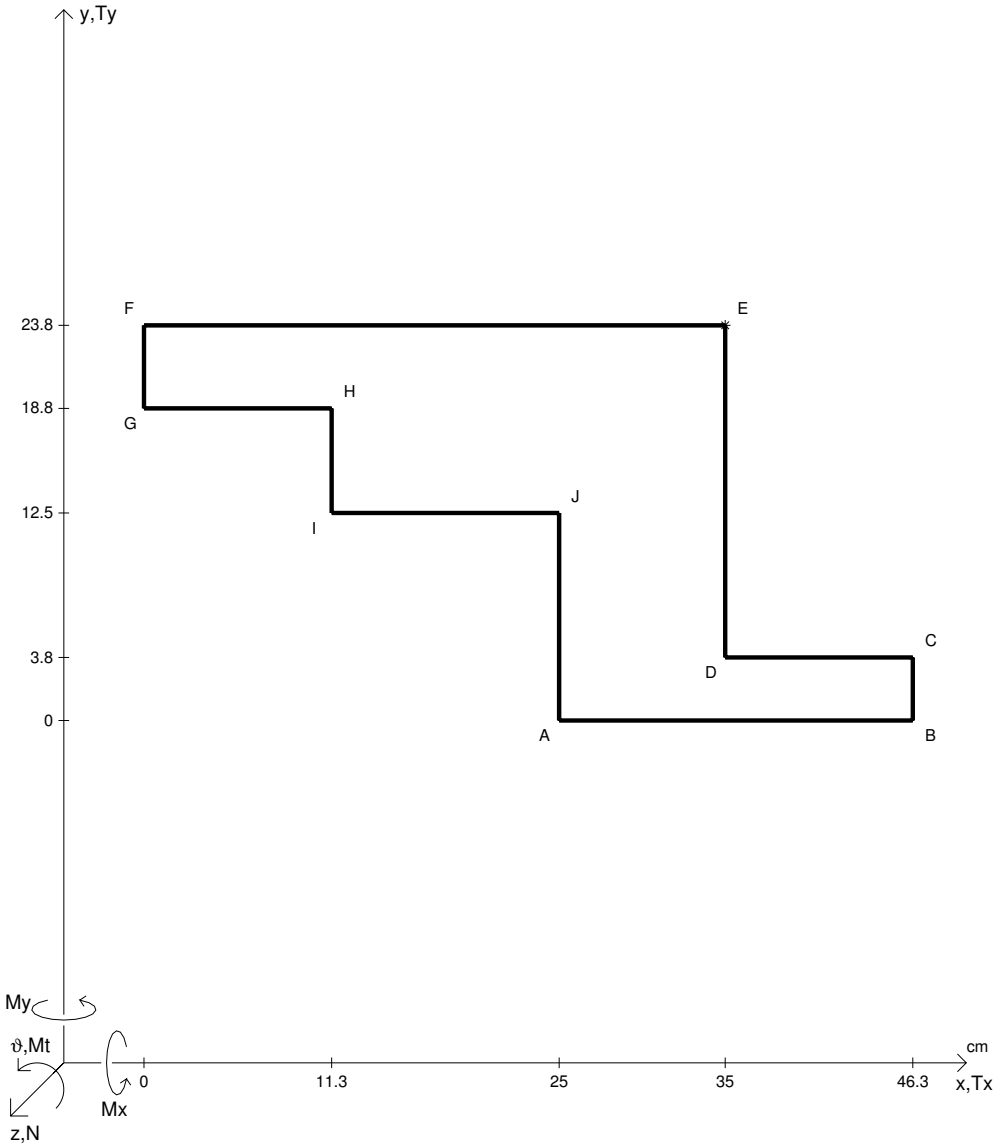
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.008



		N	= 403000 N	My	= -1110000 Ncm	E	= 21000000 N/cm^2
		Mx	= 652000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 24.12 cm	Ju	= 9844 cm^4	σ	= 2398 N/cm^2	r_U	= 4.645 cm
y_G	= 13.73 cm	Jv	= 70282 cm^4	σ_I	= 2398 N/cm^2	r_V	= 12.41 cm
A_N	= 456.3 cm^2	α	= -.5515	σ_{II}	= 0 N/cm^2	r_O	= 13.25 cm
Jxx	= 26437 cm^4	σ(N)	= 883.2 N/cm^2	σ_{MISES}	= 2398 N/cm^2		
Jyy	= 53688 cm^4	σ(Mx)	= 722.8 N/cm^2	σ_{GUEST}	= 2398 N/cm^2		
Jxy	= -26973 cm^4	σ(My)	= 791.6 N/cm^2	σ_{ID}	= 2398 N/cm^2		

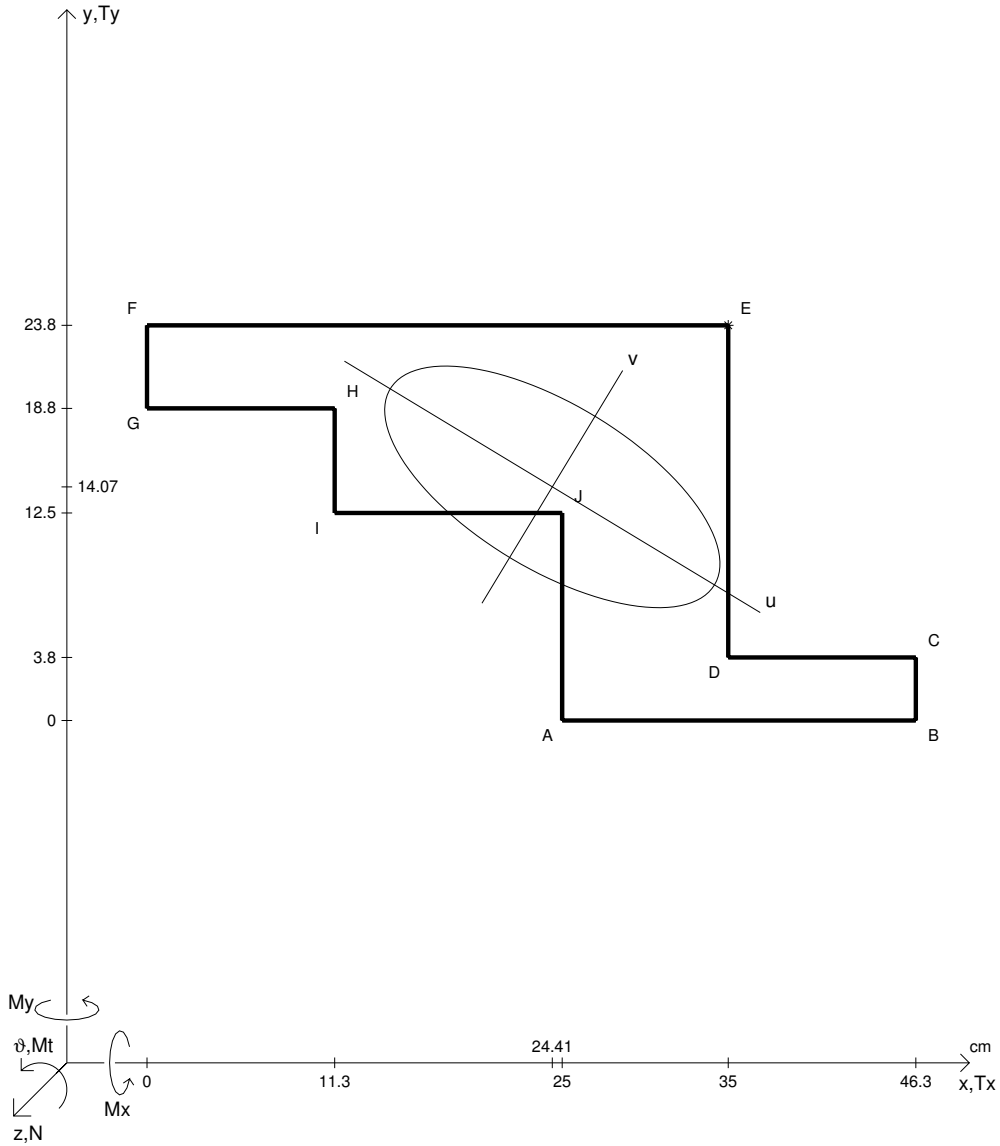
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 360000 N	My	= -1320000 Ncm	E	= 21000000 N/cm^2
		Mx	= 867000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

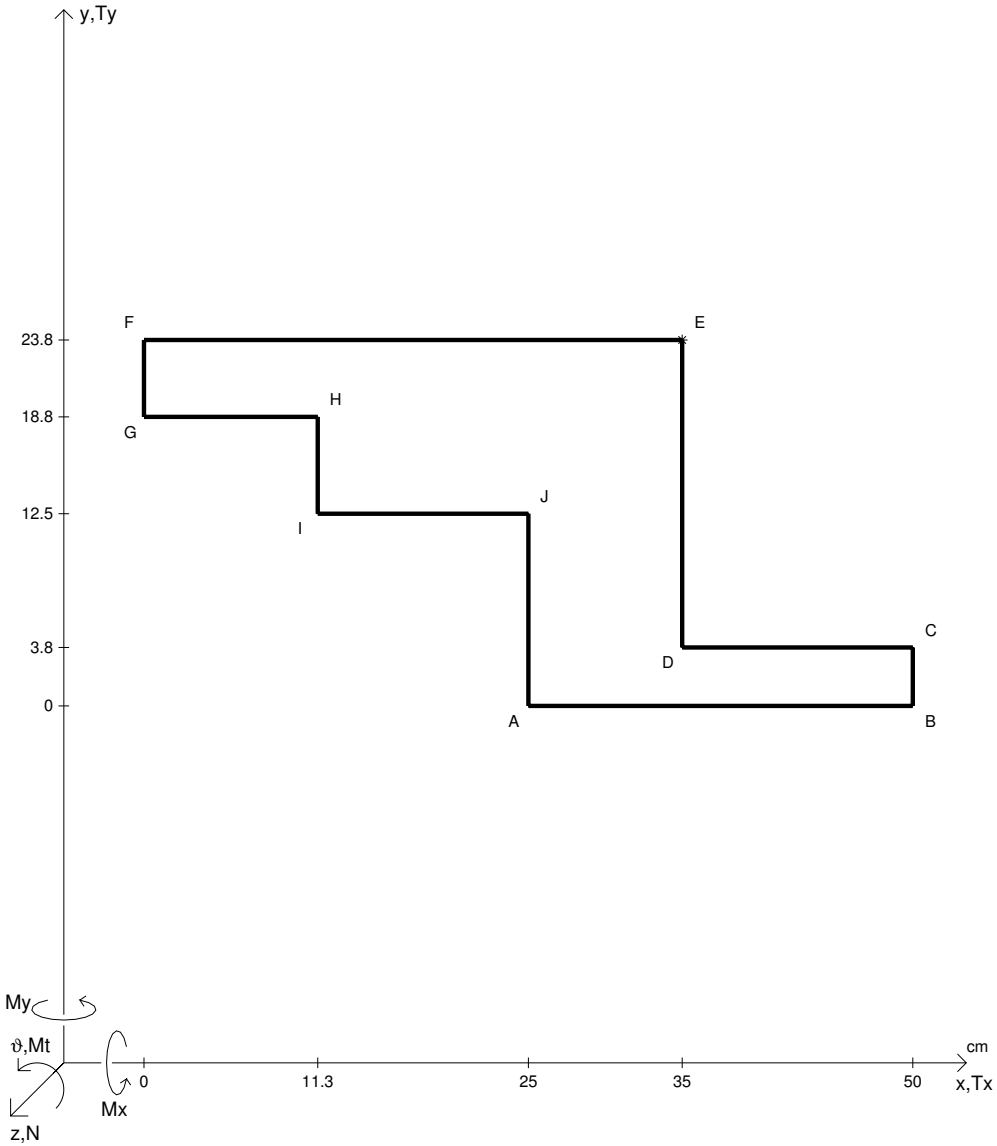
@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.009



		N	= 360000 N	My	= -1320000 Ncm	E	= 21000000 N/cm^2
		Mx	= 867000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 24.41 cm	Ju	= 12158 cm^4	σ	= 2392 N/cm^2	r_U	= 4.97 cm
y_G	= 14.07 cm	Jv	= 64080 cm^4	σ_I	= 2392 N/cm^2	r_V	= 11.41 cm
A_N	= 492.3 cm^2	α	= -.5439	σ_{II}	= 0 N/cm^2	r_O	= 12.44 cm
Jxx	= 26062 cm^4	σ(N)	= 731.3 N/cm^2	σ_{MISES}	= 2392 N/cm^2		
Jyy	= 50176 cm^4	σ(Mx)	= 814.2 N/cm^2	σ_{GUEST}	= 2392 N/cm^2		
Jxy	= -22991 cm^4	σ(My)	= 846.7 N/cm^2	σ_{ID}	= 2392 N/cm^2		

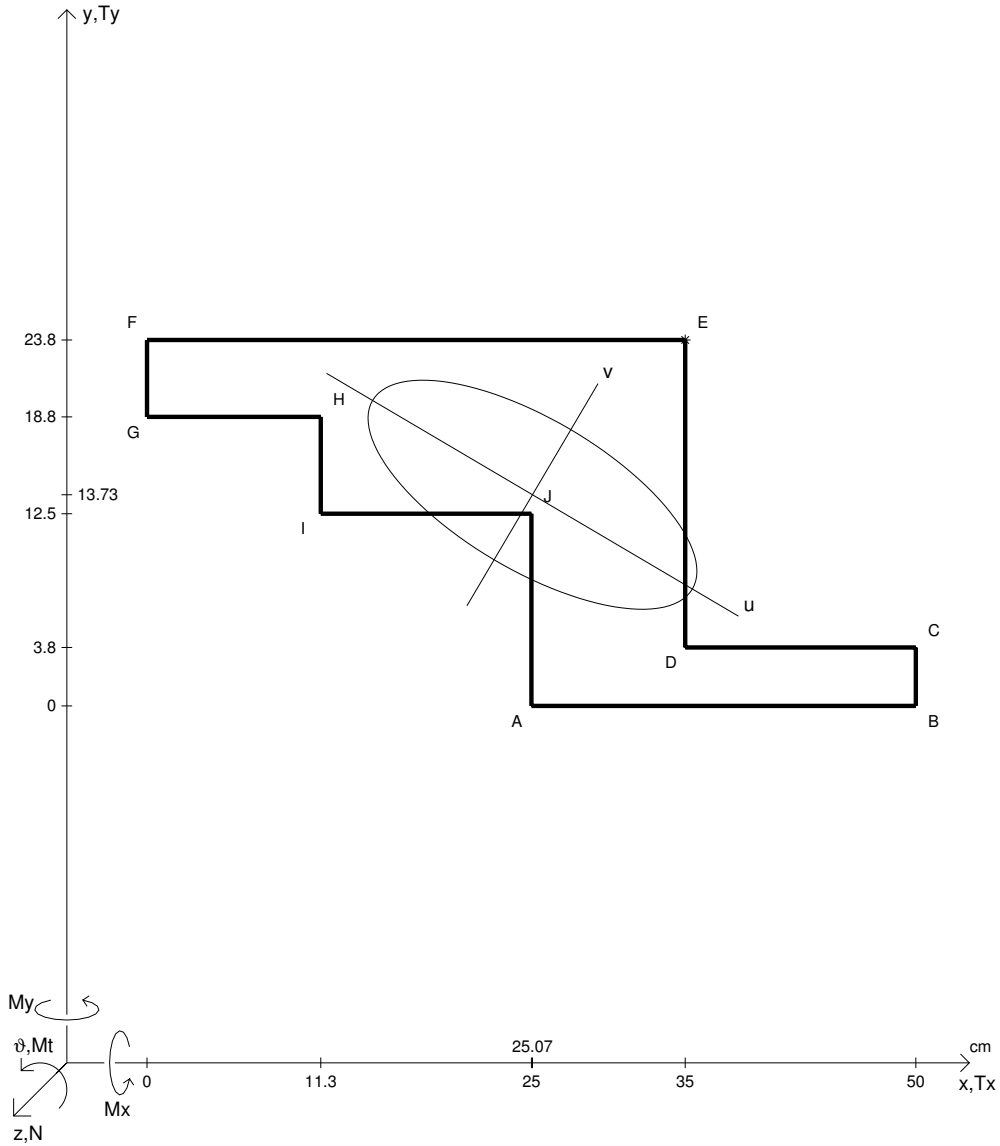
@ Adolfo Zavelani Rossi, Politecnico di Milano



		N	= 409000 N	My	= -1150000 Ncm	E	= 21000000 N/cm^2
		Mx	= 942000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	=	Ju	=	σ	=	r_U	=
y_G	=	Jv	=	σ_I	=	r_V	=
A_N	=	α	=	σ_{II}	=	r_O	=
Jxx	=	σ(N)	=	σ_{MISES}	=		
Jyy	=	σ(Mx)	=	σ_{GUEST}	=		
Jxy	=	σ(My)	=	σ_{ID}	=		

@ Adolfo Zavelani Rossi, Politecnico di Milano

Esercizi di Scienza delle Costruzioni - SEZIONE 04 ES. No.010



		N	= 409000 N	My	= -1150000 Ncm	E	= 21000000 N/cm^2
		Mx	= 942000 Ncm	σa	= 2400 N/cm^2	G	= 8000000 N/cm^2
x_G	= 25.07 cm	Ju	= 12215 cm^4	σ	= 2399 N/cm^2	r_U	= 4.912 cm
y_G	= 13.73 cm	Jv	= 73787 cm^4	σ_I	= 2399 N/cm^2	r_V	= 12.07 cm
A_N	= 506.3 cm^2	α	= -.5329	σ_{II}	= 0 N/cm^2	r_O	= 13.03 cm
Jxx	= 28104 cm^4	σ(N)	= 807.8 N/cm^2	σ_{MISES}	= 2399 N/cm^2		
Jyy	= 57898 cm^4	σ(Mx)	= 888.8 N/cm^2	σ_{GUEST}	= 2399 N/cm^2		
Jxy	= -26942 cm^4	σ(My)	= 702.2 N/cm^2	σ_{ID}	= 2399 N/cm^2		

@ Adolfo Zavelani Rossi, Politecnico di Milano