

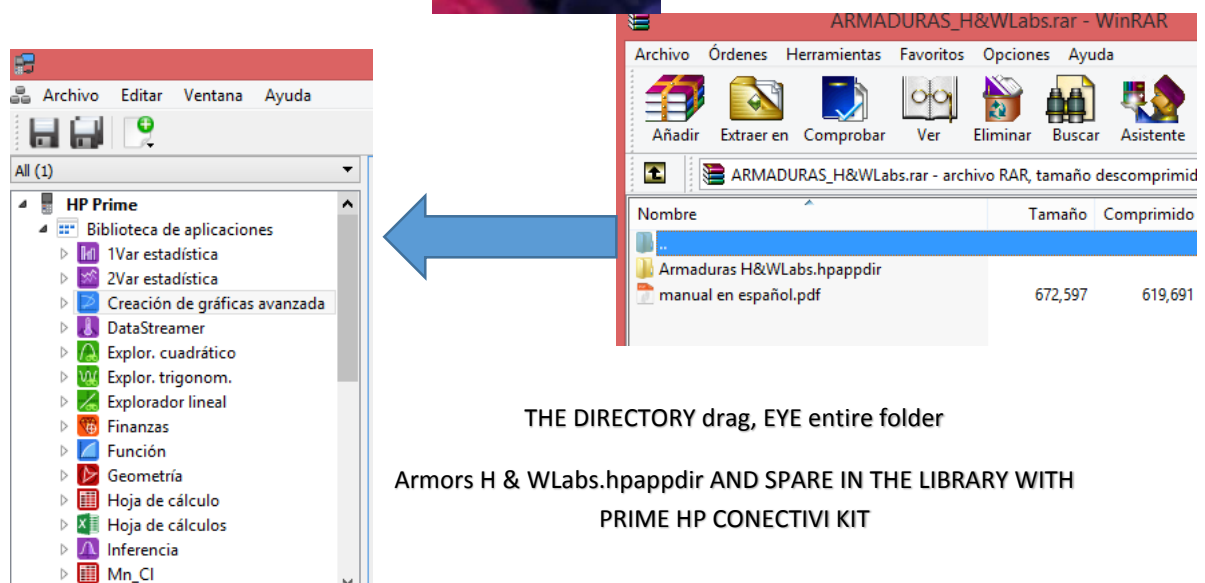
ARMADURAS H&W Labs v1.2

USER MANUAL:

1.-INSTALLATION:

HAVE THE FOLLOWING IN THE RAR :

AFTER DOWNLOADING FILES WILL

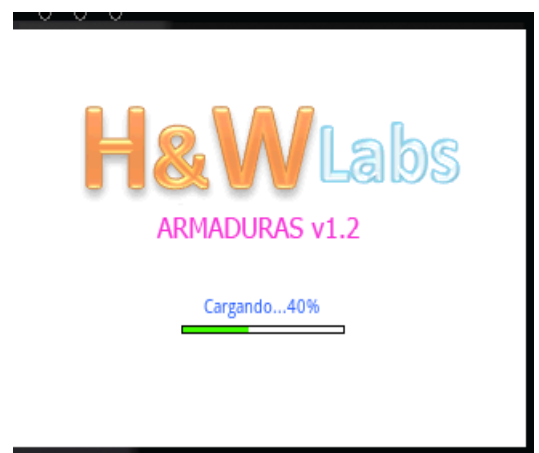


THE DIRECTORY drag, EYE entire folder

Armors H & W Labs.hpappdir AND SPARE IN THE LIBRARY WITH
PRIME HP CONECTIVI KIT

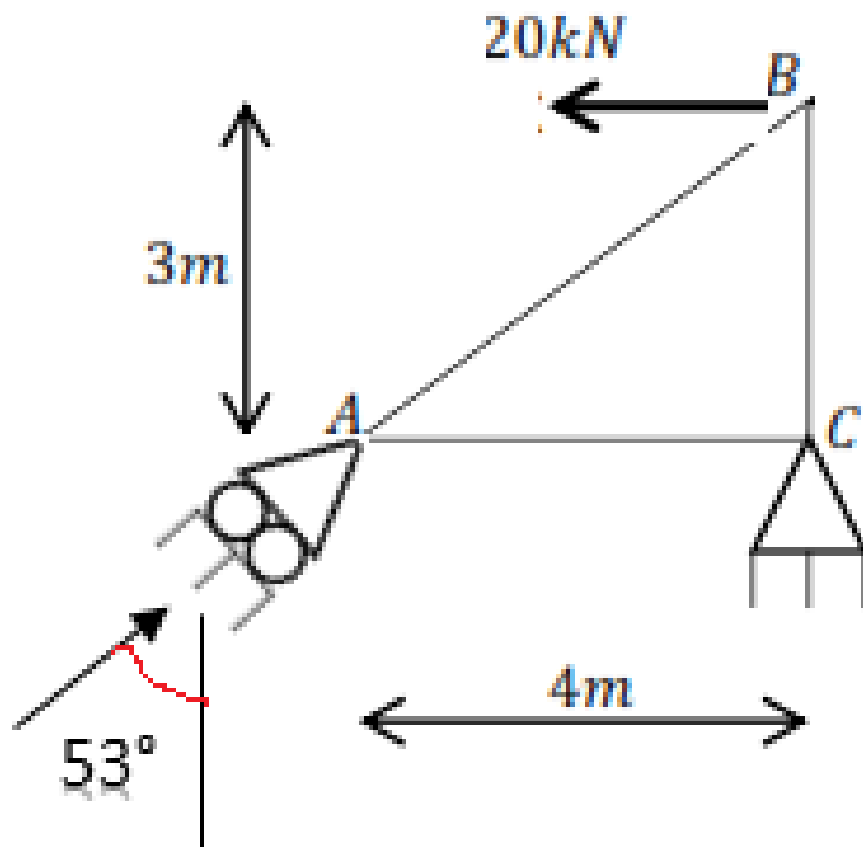
FOR USE IS INCLUDED IN A MANUAL AND ENGLISH ESÁÑOL:

RELEASED WHEN YOU WALLET IN STORE DAS HP WHETHER IN PRIME PHYSICAL OR EMULATORHABRES
YOU OPEN THIS WILL LEAVE YOU CALCULATOR

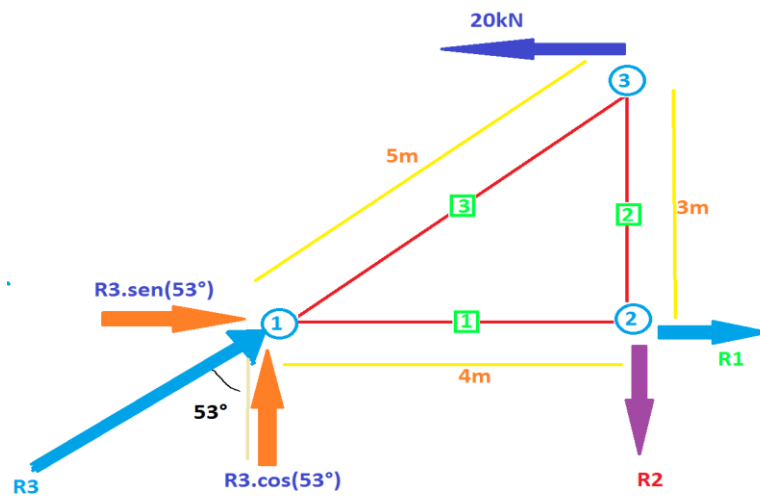


2.-DATA ENTRY: MADE AFTER INSTALLATION TO MAKE OUR proceed CALCULATIONS FOR OUR ORDER TO HAVE THIS INFORMATION ACCORDING TO THE REQUEST OF THE PROGRAM I show a video tutorial HERE AND HOW TO MAKE AN EXAMPLE OF ARMOR IN THE PROGRAM.

EXAMPLE 1.-



DEVELOPMENT: In the truss shown



We list each node and each bar according to your criteria and is the enumeration of the bar and the node can start anywhere each decision on my part I did that.

FOR NODES:

Image extract these data

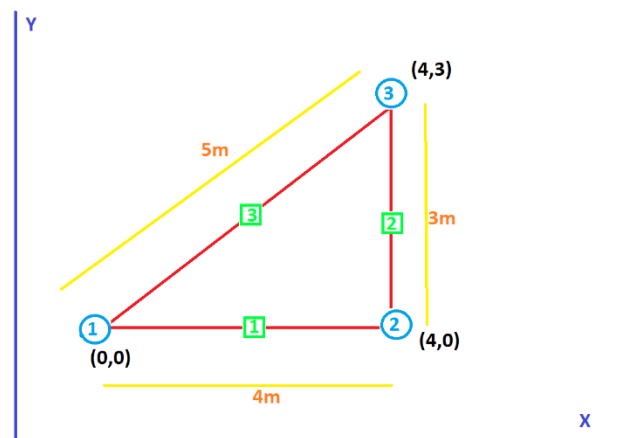
Number of nodes = 3

BARCODE NUMBER = 3

NUMBER OF REACTIONS = 3 (number of reactions is no media)

DATOS DE NODOS		
NODO	coorX	coorY
1	0	0
2	4	0
3	4	3

Where the coordinate (0,0) always start at the bottom right corner to say:



In all armor or structures put always tries to put on axis (0,0) in that position and that all coordinates are positive so that when graphed is not salgue of the screen to put negative coordinates.

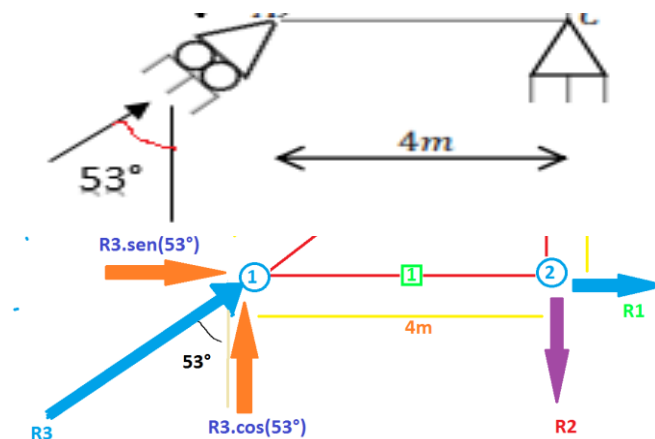
FOR BARS:

Data for the bars is simple, extract data as follows:

DATOS DE BARRAS			
BARRA	nodo inicial	nodo final	longitud
1	1	2	4
2	2	3	3
3	3	1	5

REACTIONS TO:

For reactions will be as follows:



As we have 2 supports one fixed and one mobile This is important when SUPPORT IS FIXED HAVE 2 REACTIONS WHICH enumerate AXLE (X) SERA R1 AND FOR THE SHAFT (Y) SERA R2, IN CHANGE IN MOBILE REACTIONS ONLY THERE A REATING R3 BUT AS WE SEE IN THE PICTURE gAVE A MOBILE SUPPORT BUT inclined at SIMPLY BECAUSE ITS splits into 2 AXES AND FILLING DATA IS AS FOLLOWS

DATOS DE REACCIONES			
	NODO	vecX	vecY
PARA R1	2	1	0
PARA R2	2	0	-1
PARA R3	1	0.798	0.6

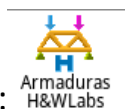
Como vemos en los llenados de datos pues se coloca el nodo en el cual está situado la reacción y sus vectores unitarios la cual para las R1 y R2 es la unidad por que el Angulo que tiene es 90° y 0° en cambio en el apoyo móvil si fuera horizontal o vertical también seria siempre la 1 en caso nos dé un Angulo pues desdoblamos en sus 2 ejes. Ojo TAMBIEN DEBEMOS RESPETAR EL SENTIDO DE LAS FLECHAS, si es para arriba es positivo, si es para abajo es negativo, si es derecha negativo, si es izquierda positivo ya es muy conocido eso.

FOR LOADS or FORCES IN NODES:

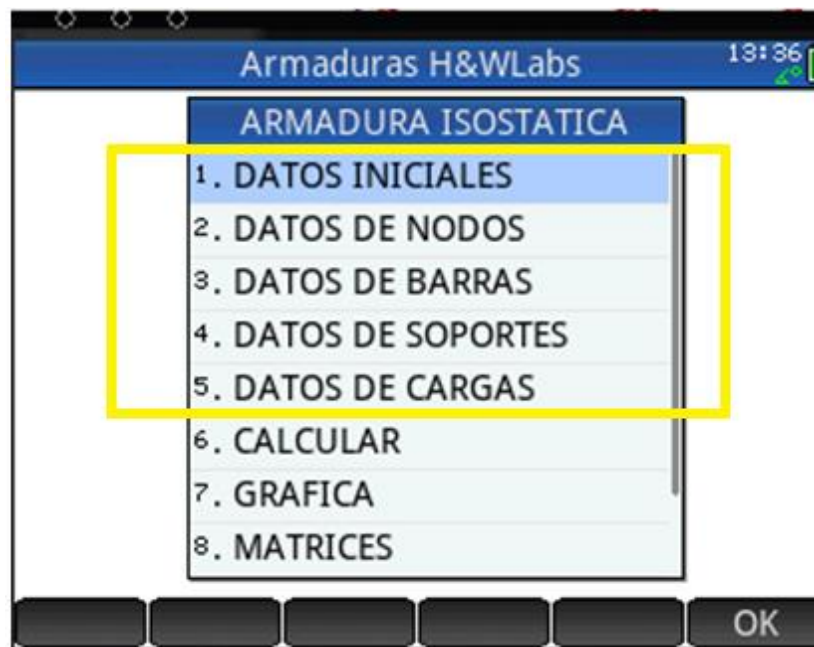
For it is the same as the previous step but with the difference that here we know the magnitude of load or force.

DATOS DE CARGAS		
NODO	cargaX	carga Y
3	-20	0

USE OF APPLICATION:



We run: we will get the next window and fill the data in the SELECTED options.



IF WE HAD STORED DATA AS FOLLOWS erase FOR FILLING FAST

	NODO	coorX	coorY
1	1	2	0
2	2	1.597	1.2036
3	3	3.1945	2.407
4	4	4.7918	3.61089
5	5	0	2
6	6	1.597	3.2036
7	7	3.1945	4.407
8			

	NODO	coorX	coorY
1	1	2	0
2	2	1.597	1.2036
3	3	3.1945	2.407
	Más	4.7918	3.61089
	1 Insertar	0	2
	2 Elim.	1.597	3.2036
	3 Seleccionar	3.1945	4.407
	4 Selección		
	5 Intercambiar		

	NODO	coorX	coorY
1	1	2	0
2			

Filling data:

Number of nodes = 3

BARCODE NUMBER = 3

NUMBER OF REACTIONS = 3 (is number reactions media)

DATOS INICIALES

Nº de nodos : 3

Nº de barras : 3

Nº de reacciones : 3

Ingrese numero de nodos

DATOS DE NODOS		
NODO	coorX	coorY
1	0	0
2	4	0
3	4	3

	NODO	coorX	coorY
1	1	0	0
2	2	4	0
3	3	4	3
4			

DATOS DE BARRAS			
BARRA	nodo inicial	nodo final	longitud
1	1	2	4
2	2	3	3
3	3	1	5

	BARRA	NI	NF	LONG
1	1	1	2	4
2	2	2	3	3
3	3	3	1	5
4				

	DATOS DE REACCIONES		
	NODO	vecX	vecY
PARA R1	2	1	0
PARA R2	2	0	-1
PARA R3	1	0.798	0.6

	NODO	RX	RY	
	1	2	3	4
1	2	1	0	
2	2	0	-1	
3	1	0.798	0.6	
4				

2

Editar Más Ir a Ir → Canc. OK

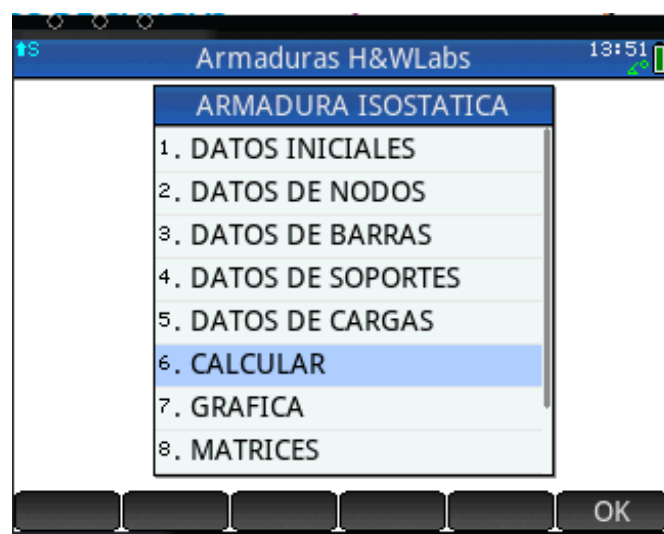
	DATOS DE CARGAS	
	NODO	cargaX carga Y
	3	-20 0

	NODO	CX	CY	
	1	2	3	4
1	3	-20	0	
2				

3

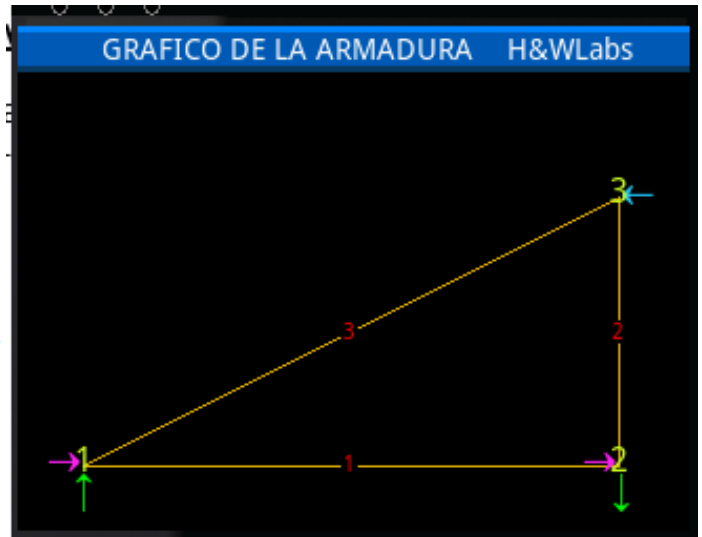
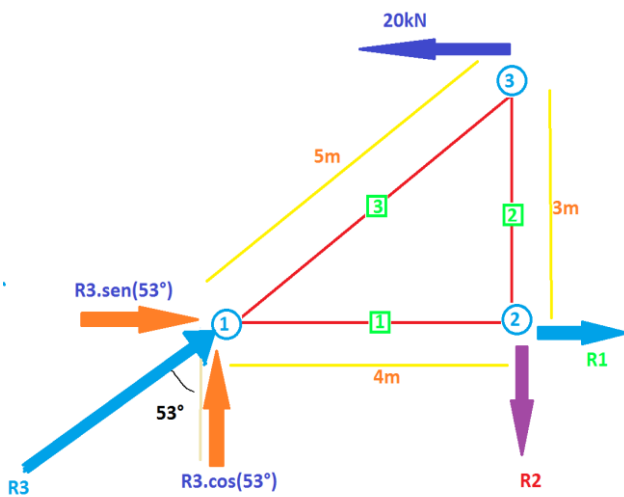
Editar Más Ir a Ir → Canc. OK

after filling the data I'm going to calculate option. And with that I finish filling data



RESULTS:

GRAPHIC: it serves to see if you introduced your data well, and the dimension of the model that you will always see on the screen ;)



to return to the results just press ESC

MATRICES:

The matrices option will take you to selections that you want to see

1. MATRIX GRAPHIC option:

ANÁLISIS DE ESTRUCTURAS POR MÉTODO DE MATRICES							
		F1	F2	F3	R1	R2	R3
F1	①	X 1	0	0.79	0	0	0.79
F2		Y 0	0	0.59	0	0	0.59
F3	②	X -1	0	0	1	0	0
R1		Y 0	1	0	0	-1	0
R2	③	X 0	0	-0.8	0	0	0
R3		Y 0	-1	-0.6	0	0	0

ANALISIS DE ESTRUCTURAS POR METODO DE MATRICES

		F1	F2	F3	R1	R2	R3			
F1 F2 F3 R1 R2 R3	①	X	1	0	0.79	0	0	0.79	0 0 0 0 -20 0	①
		Y	0	0	0.59	0	0	0.59		②
	②	X	-1	0	0	1	0	0		②
		Y	0	1	0	0	-1	0		③
	③	X	0	0	-0.8	0	0	0		
		Y	0	-1	-0.6	0	0	0		

To see complete only move the screen with your fingertips as a scroll

What we see is the armed matrices and automatically:

$$[F] = -[M]^{-1}x[C]$$

END RESULTS HAVE:

CALCULO DE ARMADURAS v1.2 H&WLabs

RESULTADOS DE CARGAS

Nº	BARRA	NI	NF	LONG	FUERZA	ESTADO	REAC	CARGA
1	F1	1	2	4	0.049	TRAC	R1	0.049
2	F2	2	3	3	15	TRAC	R2	15
3	F3	3	1	5	-25	COMP	R3	25

In the results bar number and the force exerted is observed if negative is compression and if positive means that the bar is tension or traction for reactions, incase give us negative serious simplemete that when

introducing the data are assuming an address for reactions, if it comes out negative means that the direction of the reaction is contrary or arrow is in the opposite direction, simply change the direction because the answer will be the same but with opposite sign ☹

GOOD FRIENDS AS ALL THAT WOULD BE BETTER WITH IRE AS ANY ERRORS later DETECTED THAT ESCAPED AYA ME BECAUSE SIMPLY LEAVE THE VIDEO OR COMMENTS ON PAGE: