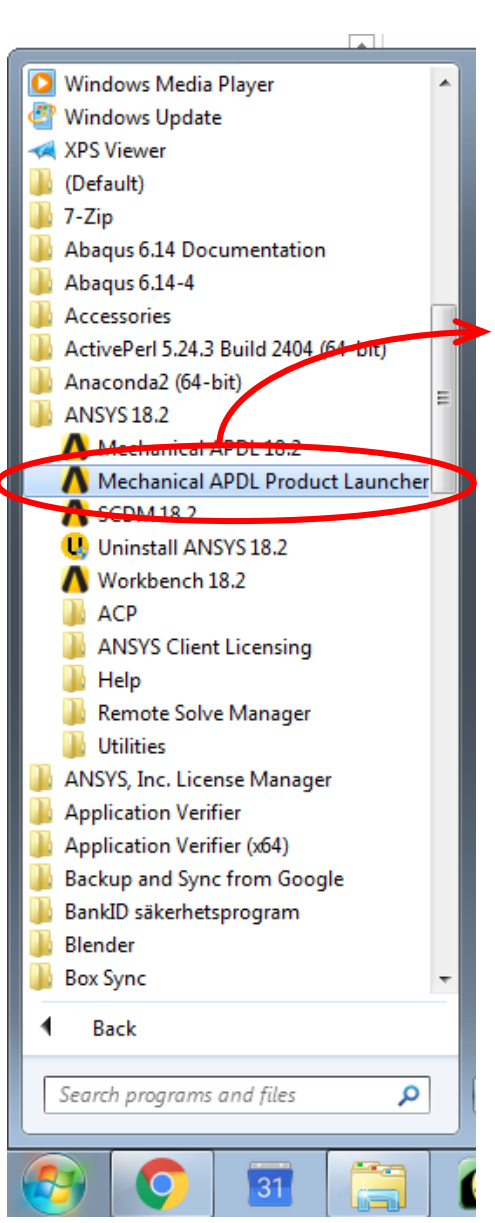
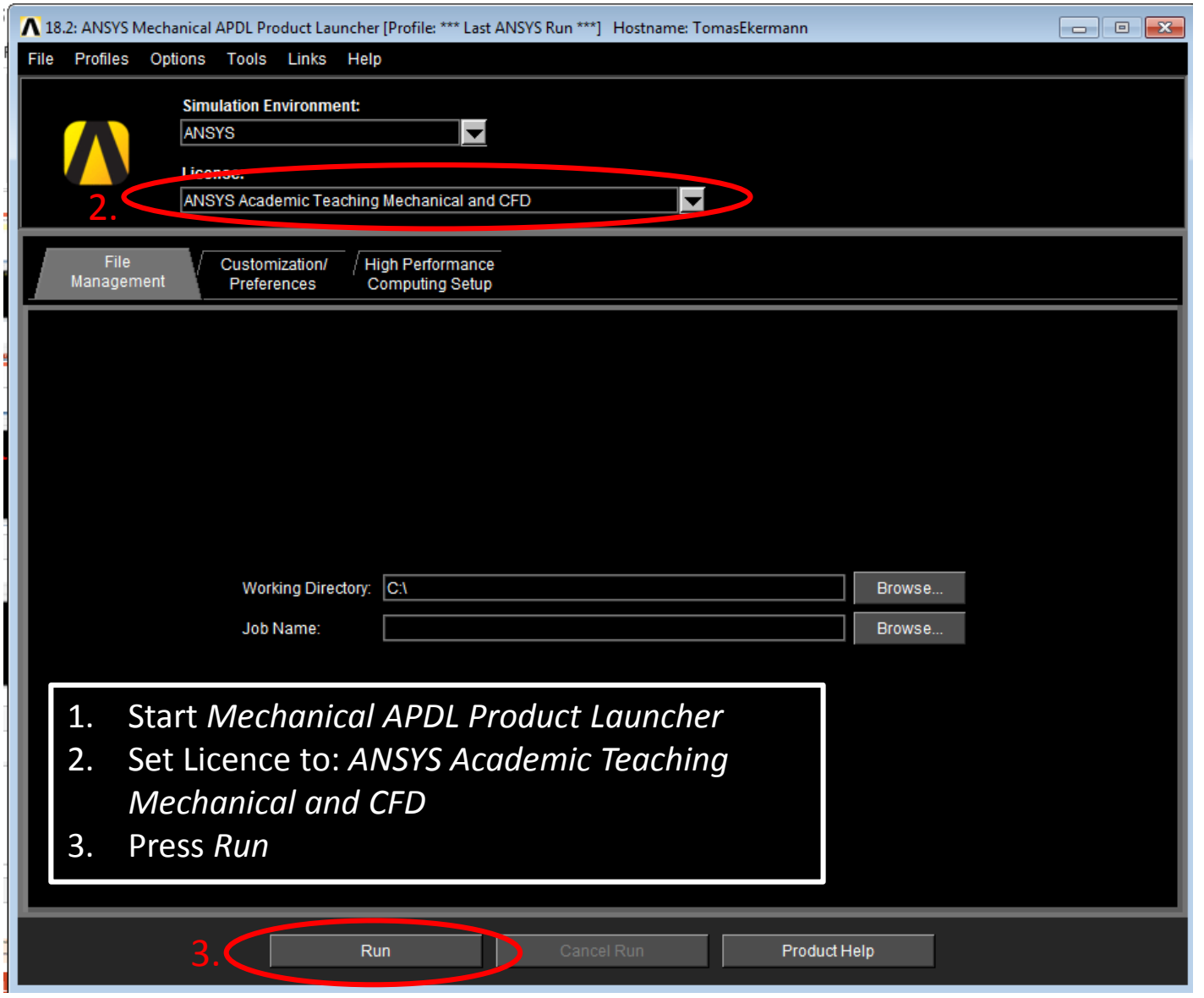
Introduction to ANSYS Classic

SD2411 Lightweight Structures and FEM

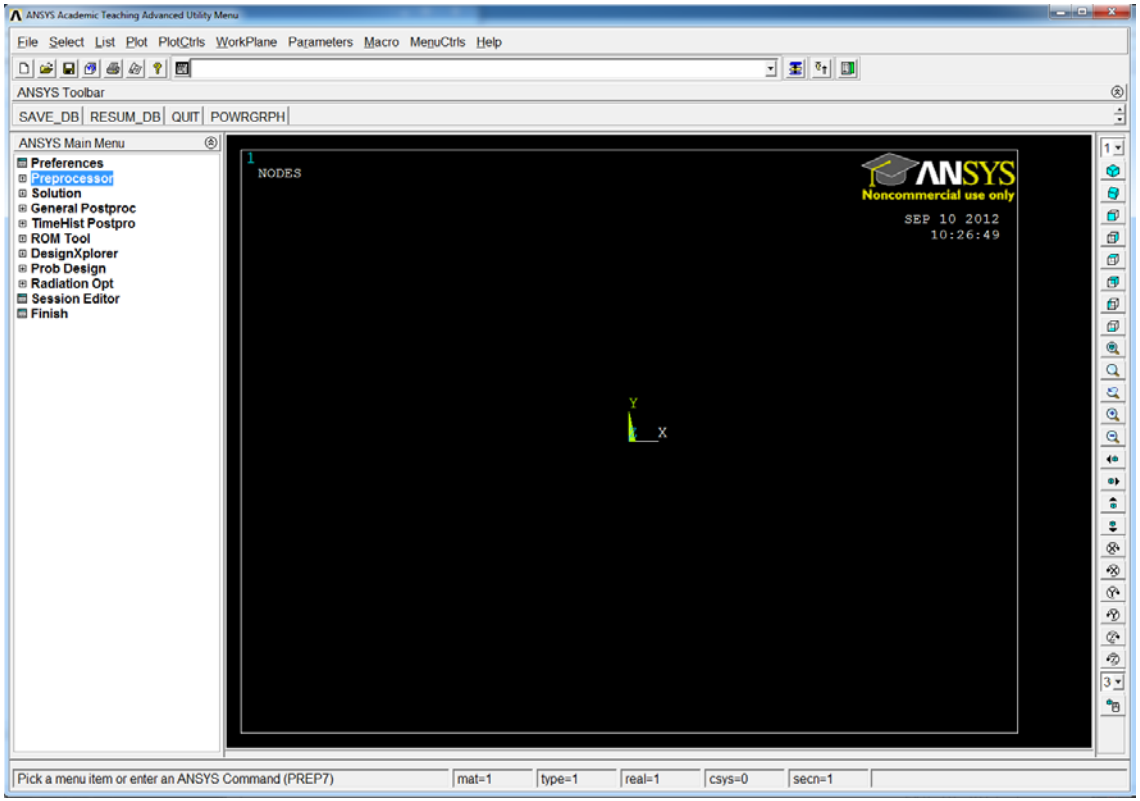
Starting ANSYS Classic





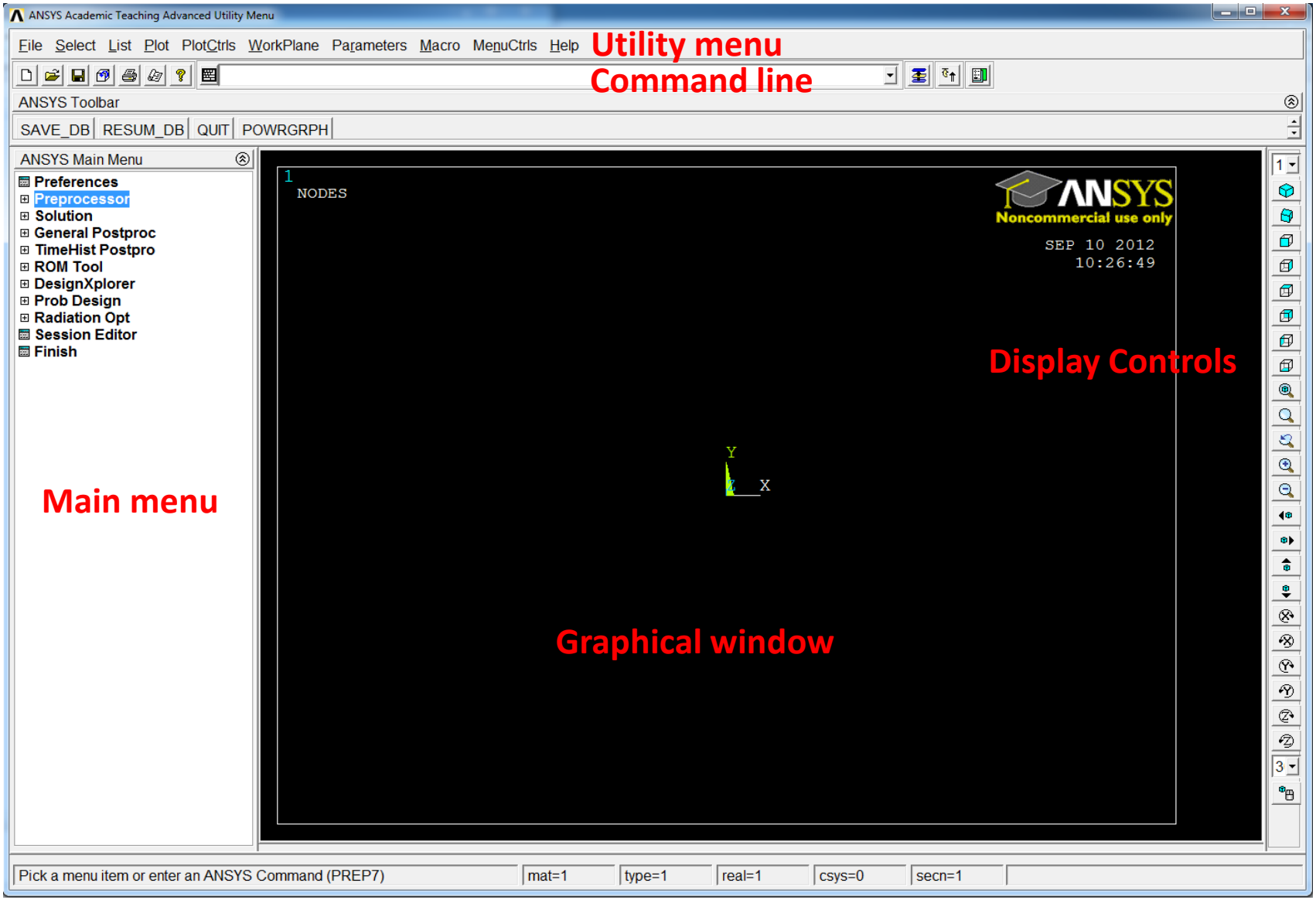
At start up

Output window

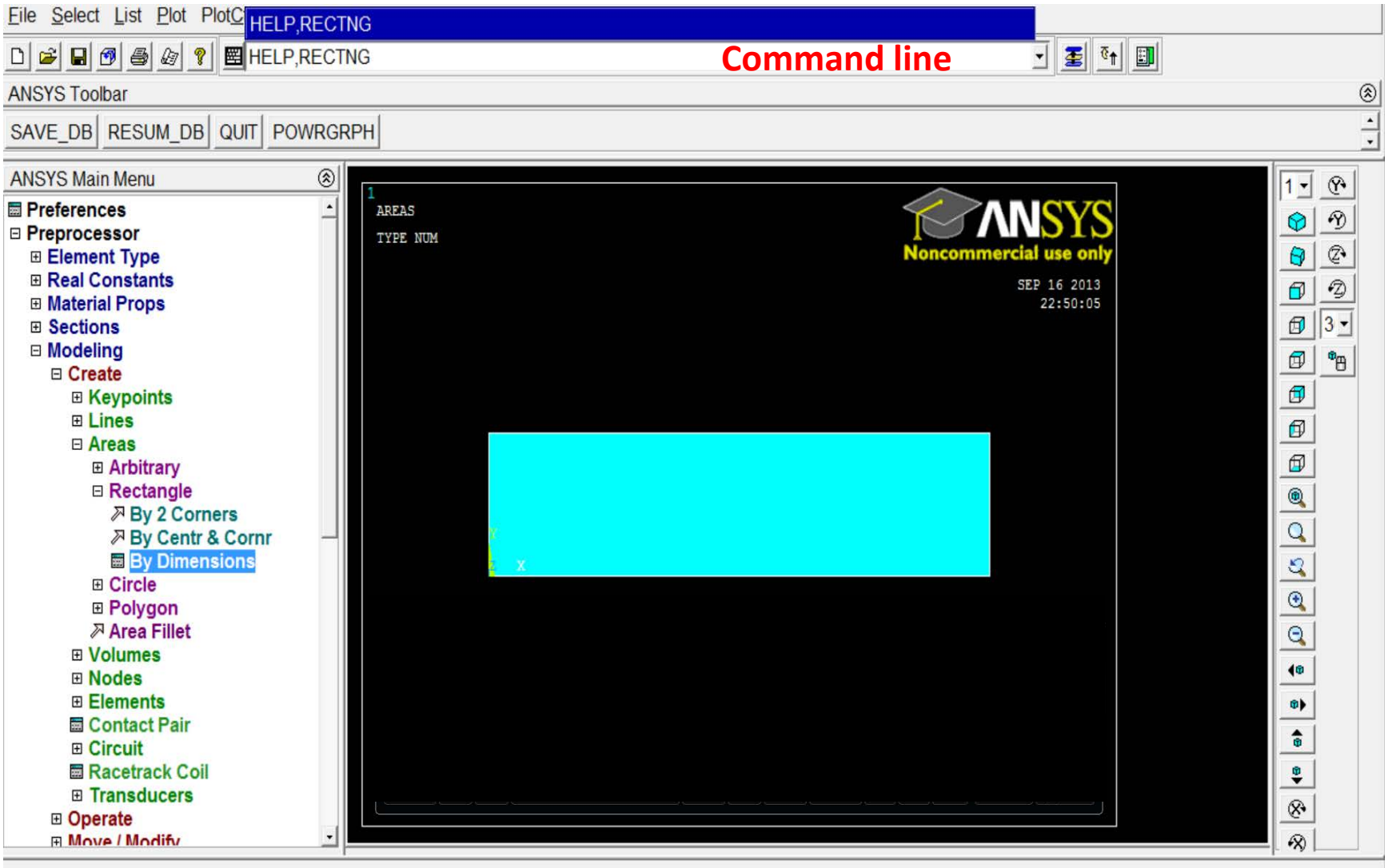


Main window

Main window


ANSYS Academic Teaching Advanced Utility Menu
File Select List Plot PlotCtrls WorkPlane Parameters Macro MenuCtrls Help
Utility menu
Command line
ANSYS Toolbar
SAVE_DB RESUM_DB QUIT POWRGRPH
ANSYS Main Menu
Preferences
Preprocessor
Solution
General Postproc
TimeHist Postpro
ROM Tool
DesignXplorer
Prob Design
Radiation Opt
Session Editor
Finish
Main menu
1
NODES
ANSYS
Noncommercial use only
SEP 10 2012
10:26:49
Display Controls
Y
X
Graphical window
Pick a menu item or enter an ANSYS Command (PREP7)
mat=1
type=1
real=1
csys=0
secn=1

Main window



Main menu

ANSYS Main Menu

Preprocessor

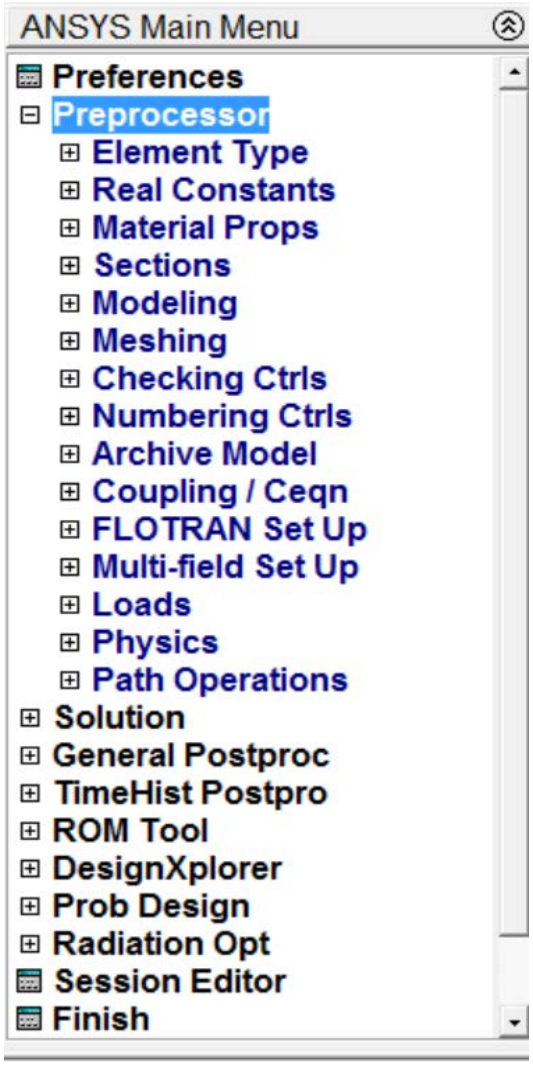
1) Define element type(s)
2) Define material properties (E,ν)
3) Create the model geometry
4) Mesh the geometry
5) Apply loads

Solution

1) Solve

Postprocessor

1) Extract results
2) Check the validity of the solution

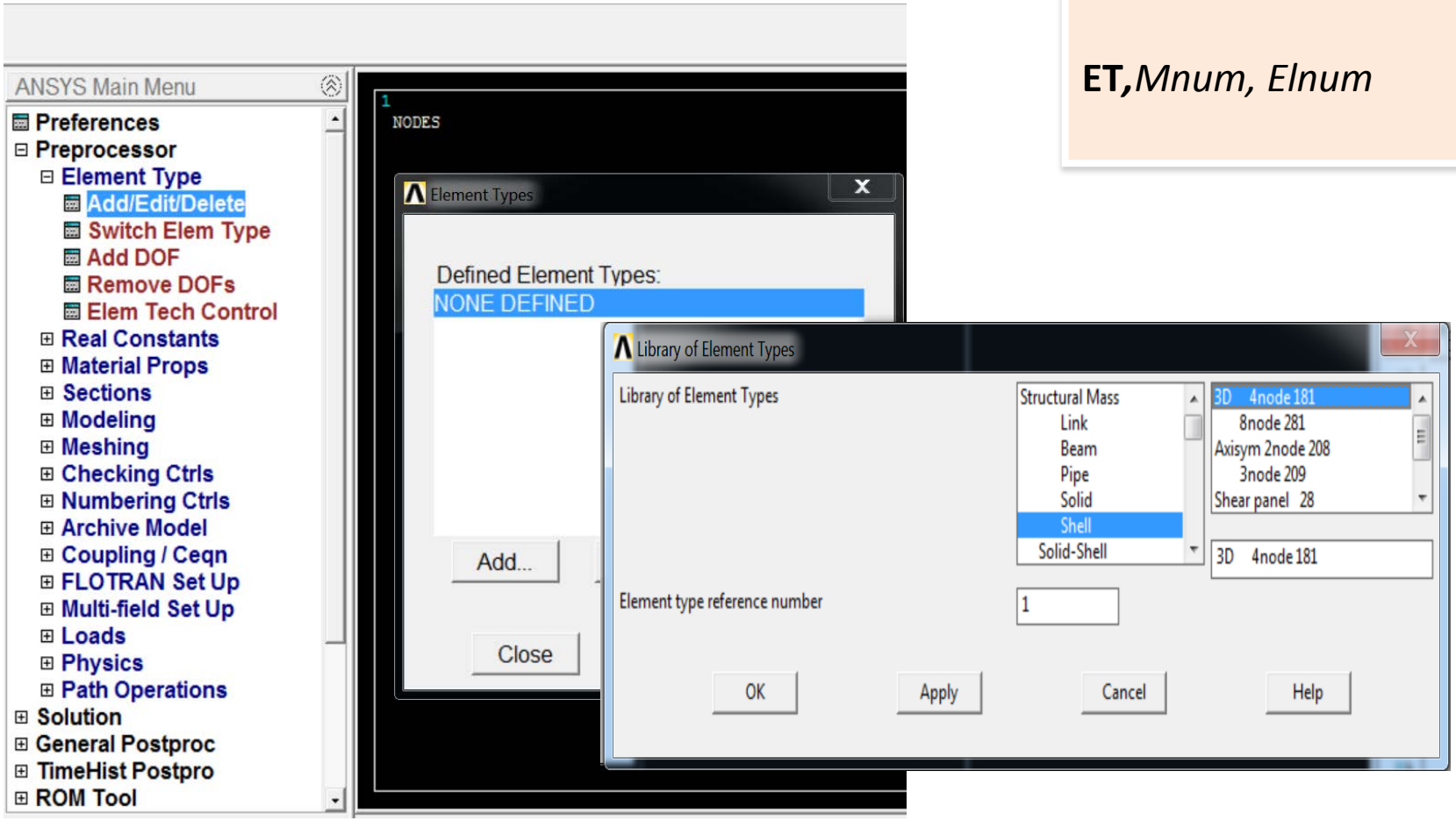


Preprocessing

1) Define element type(s)

ANSYS Command: **ET**

ET,*Mnum, Elnum*

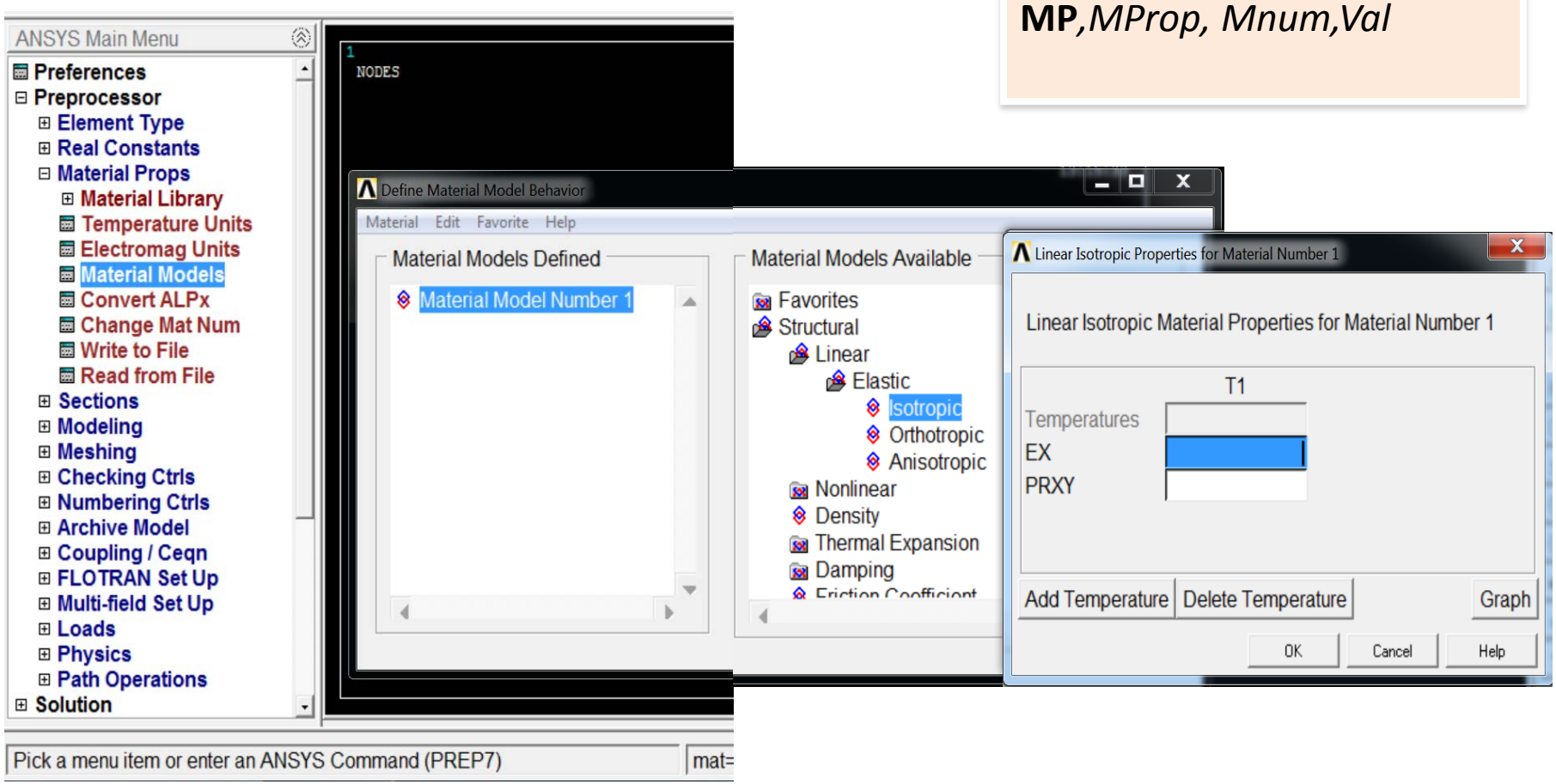


Preprocessing

2) Define material properties (E,v)

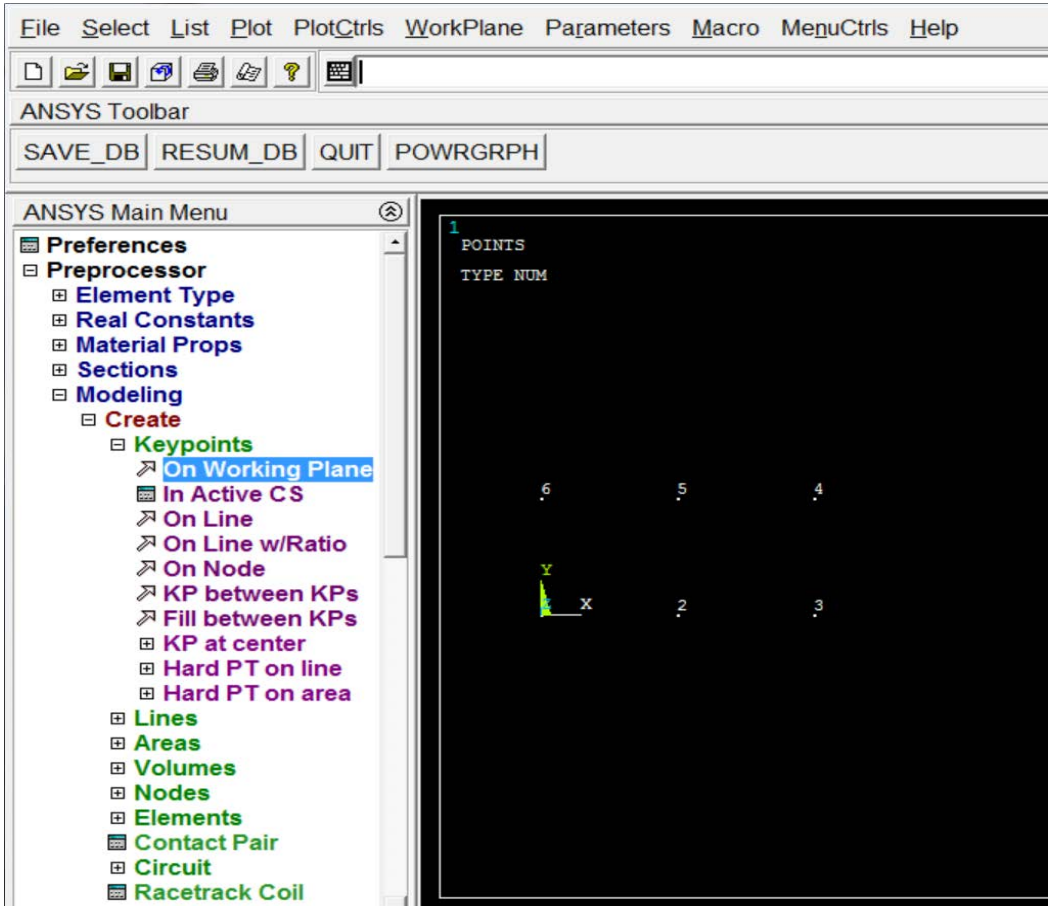
ANSYS Command: **MP**

MP,*MProp, Mnum,Val*



Preprocessing

3) Create the model geometry (keypoints)

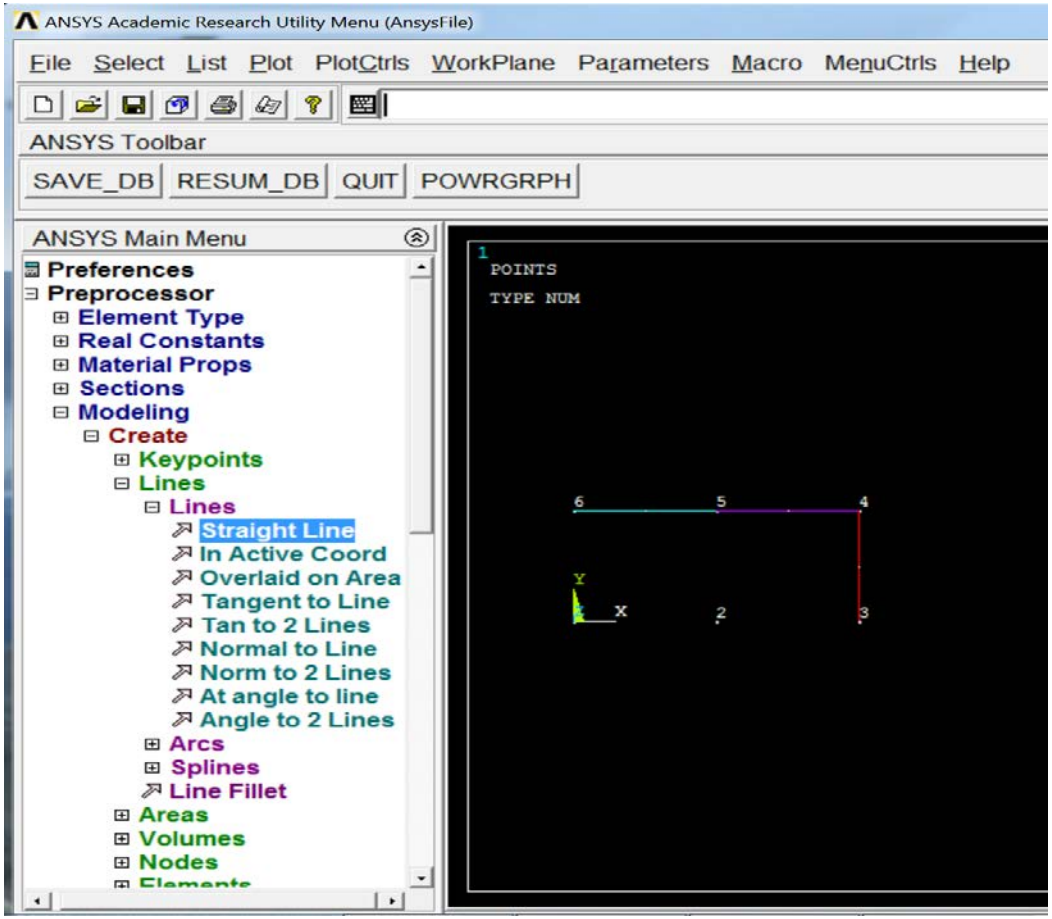


ANSYS Command: **K**

K,*KPnum,Xcoord,Ycoord,Zcoord*

Preprocessing

3) Create the model geometry (lines)

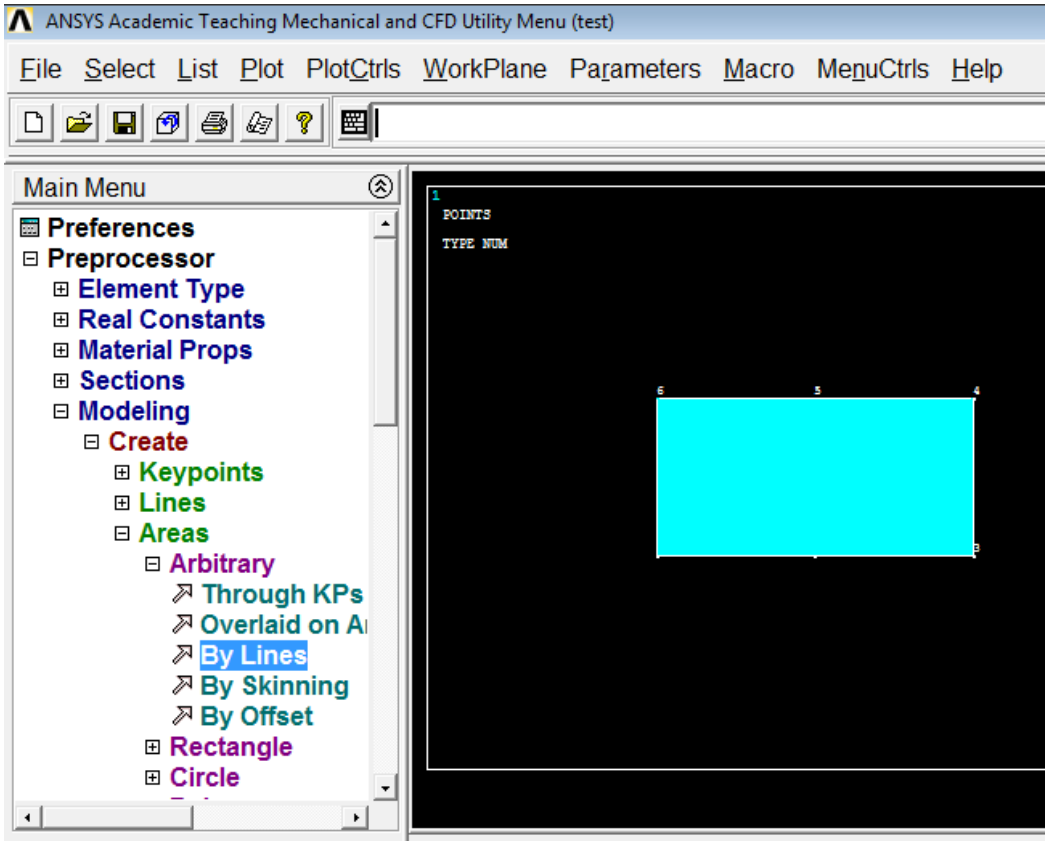


ANSYS Command: **L**

L,*KP1*,*KP2*

Preprocessing

3) Create the model geometry (areas)

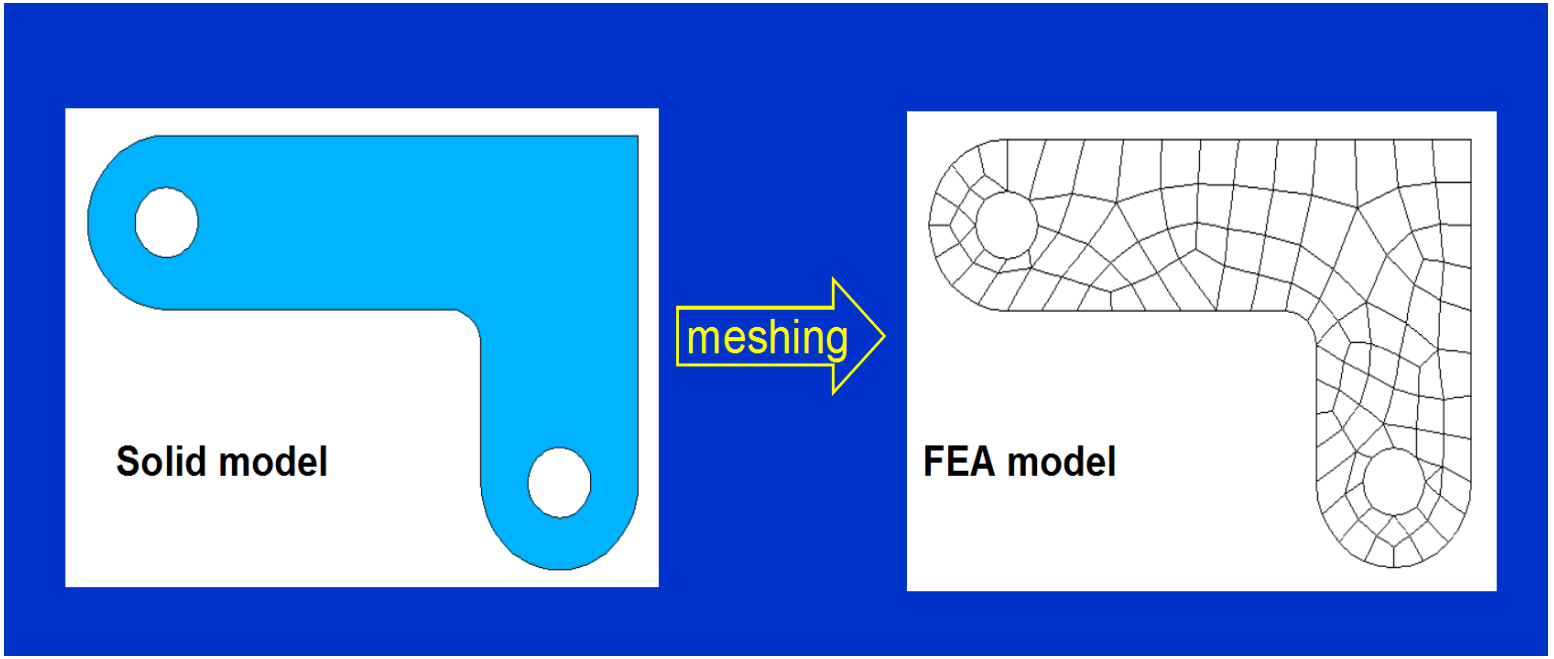


ANSYS Command: **AL**

AL,*Line1,Line2,Line3,Line4*

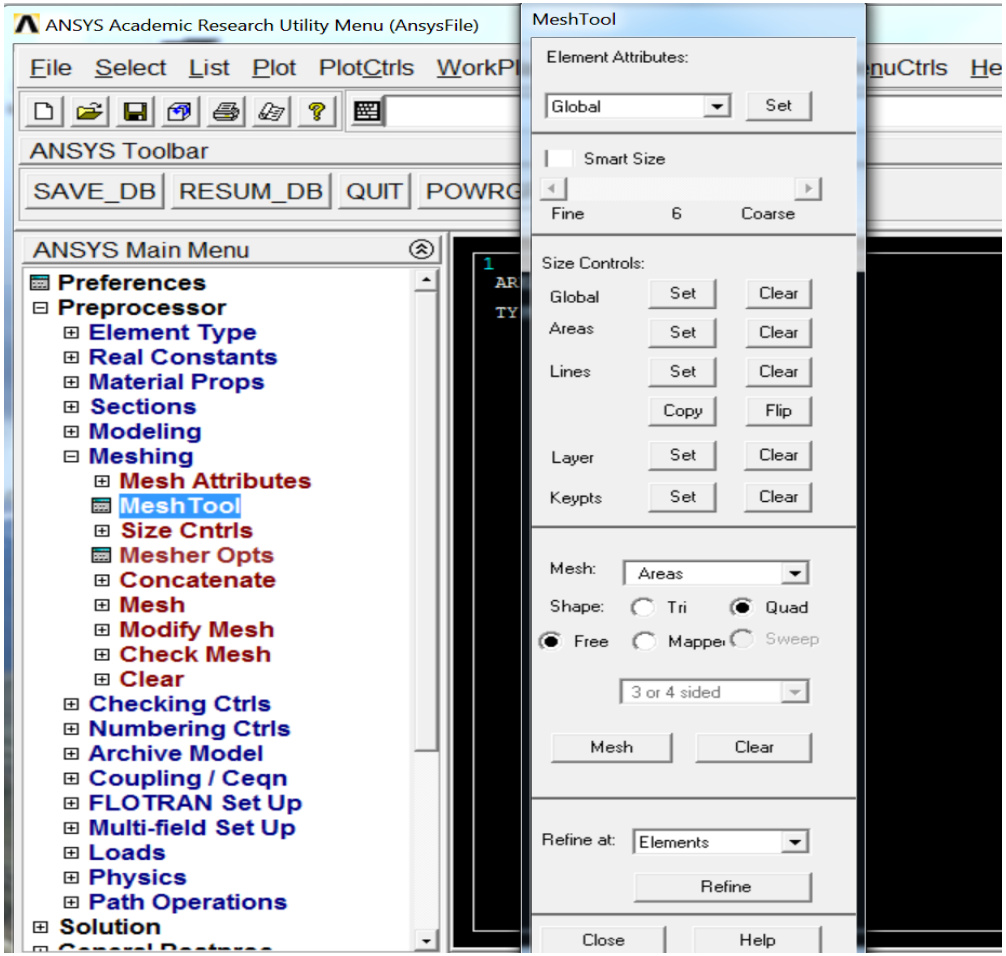
Preprocessing

4) Mesh the geometry



Preprocessing

4) Mesh the geometry



ANSYS Command: **LESIZE**

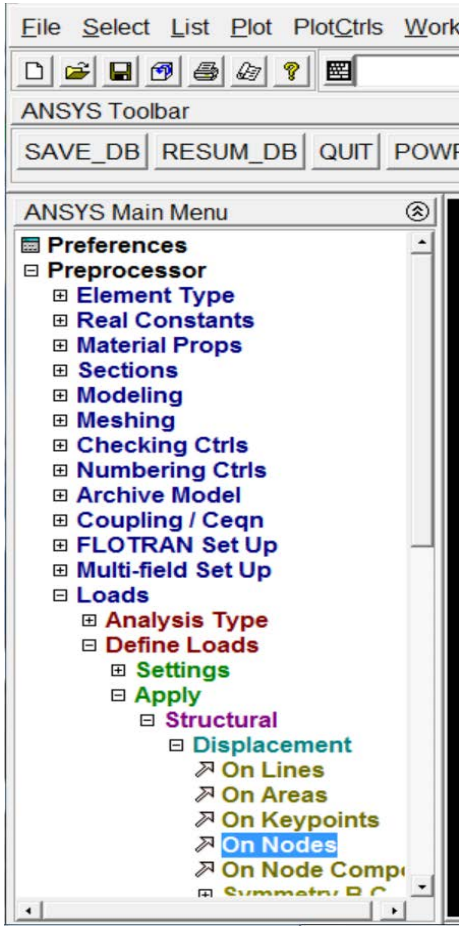
LESIZE, *Linenum, , ,Ndiv,Space*

ANSYS Command: **AMESH**

AMESH, *Areanum*

Preprocessing

5) Apply Loads

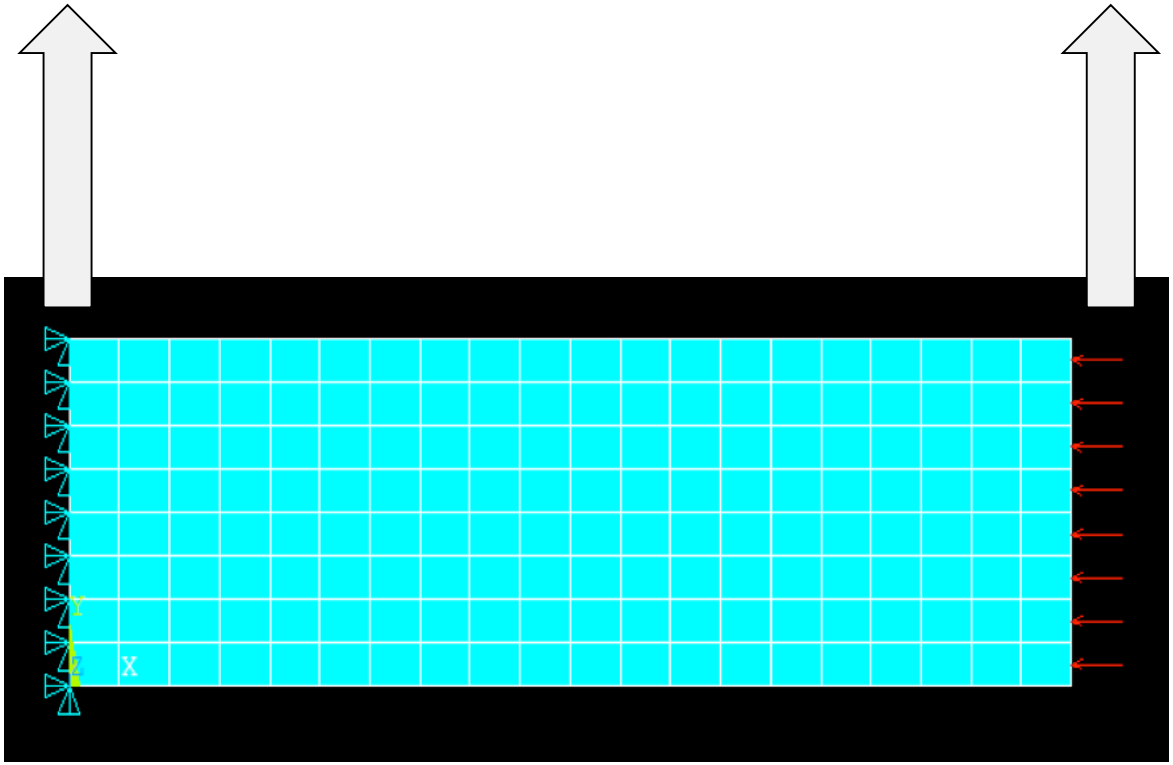


ANSYS Command: **D**

D,*node ,lab,value*

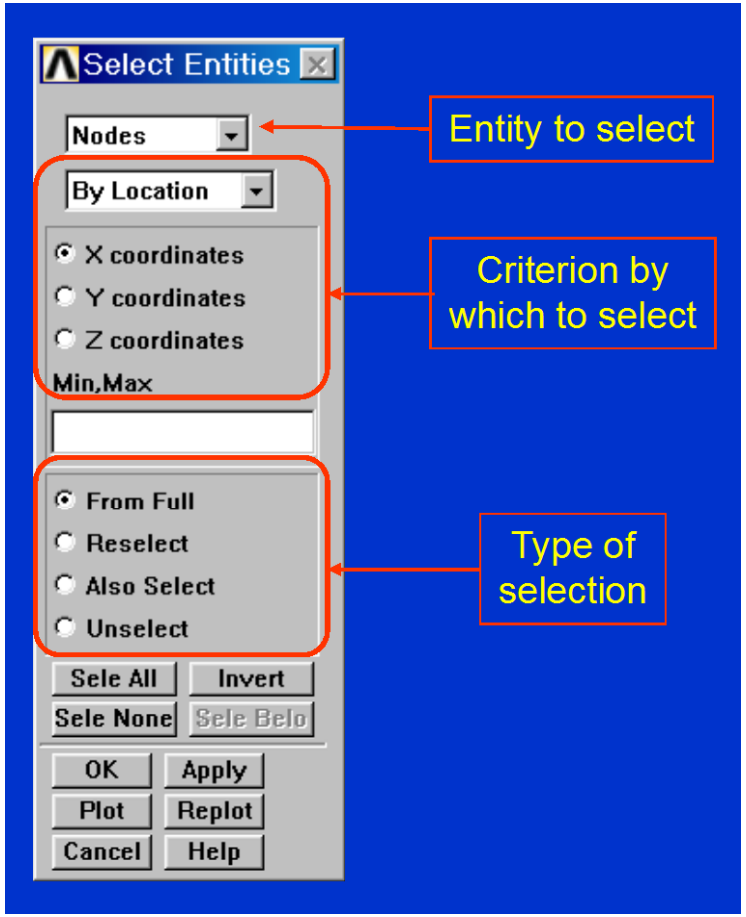
ANSYS Command: **F**

F,*node,lab,value*



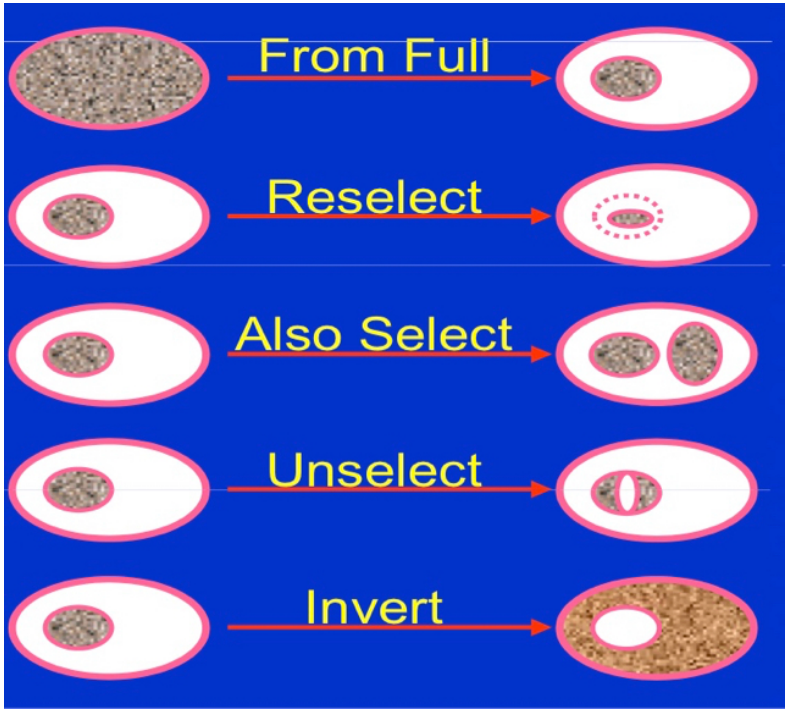
How to select objects?

Select Entities



ANSYS Command: **NSEL**

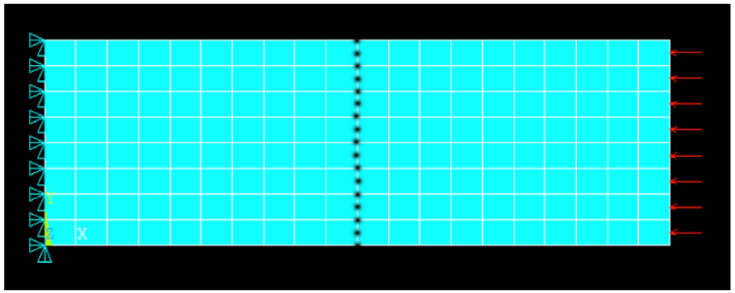
NSEL,*Type,Item,Comp,VMIN,VMAX*



How to select objects?

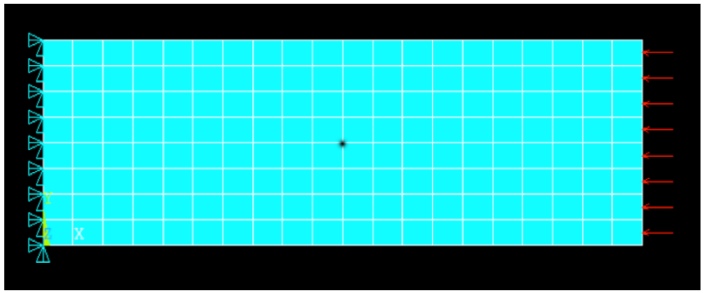
ANSYS Command:

NSEL,*S,LOC,X,L/2*



ANSYS Command:

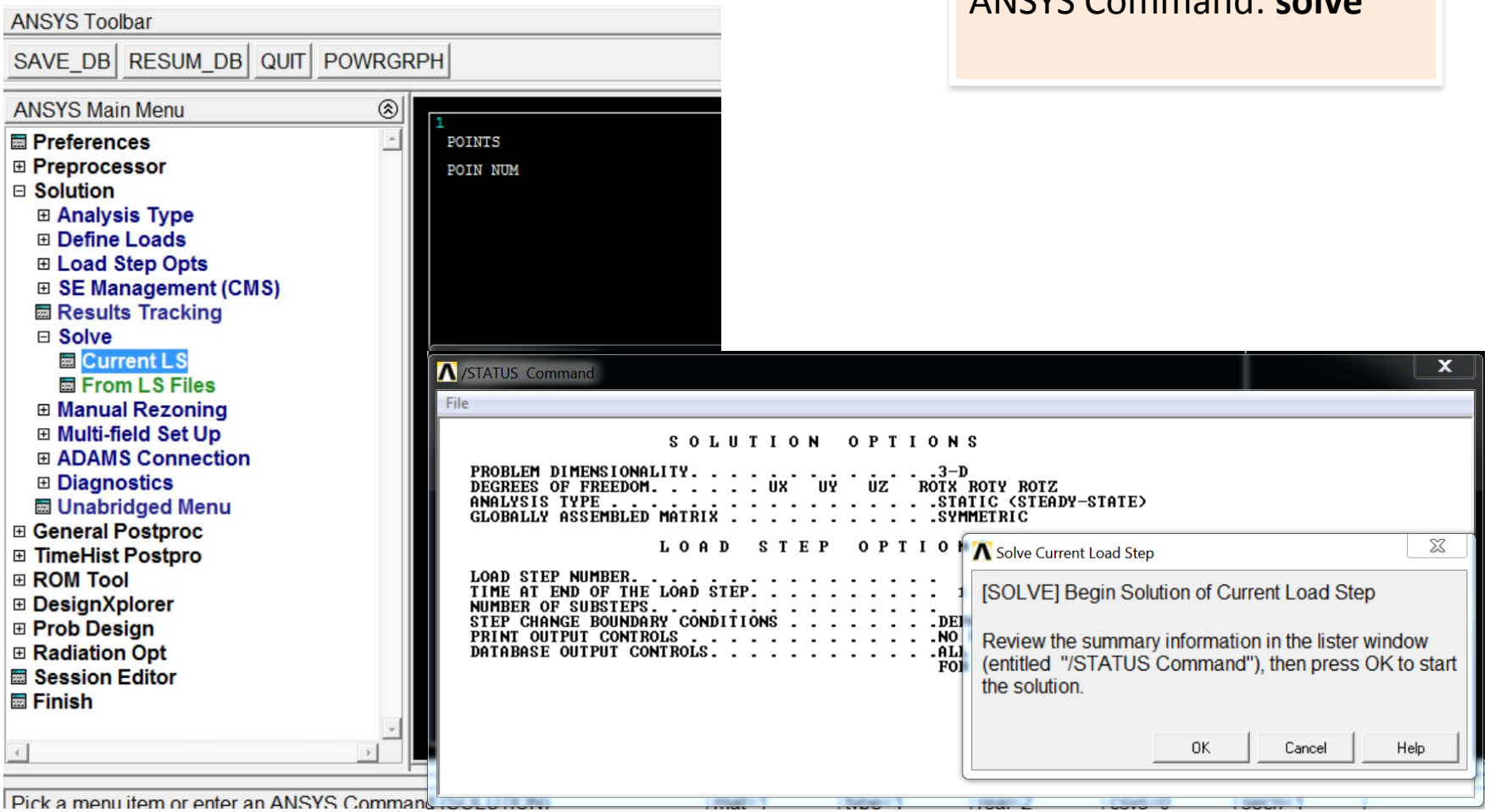
NSEL,*S,LOC,X,L/2*
NSEL,*R,LOC,Y,W/2*



Solution processor

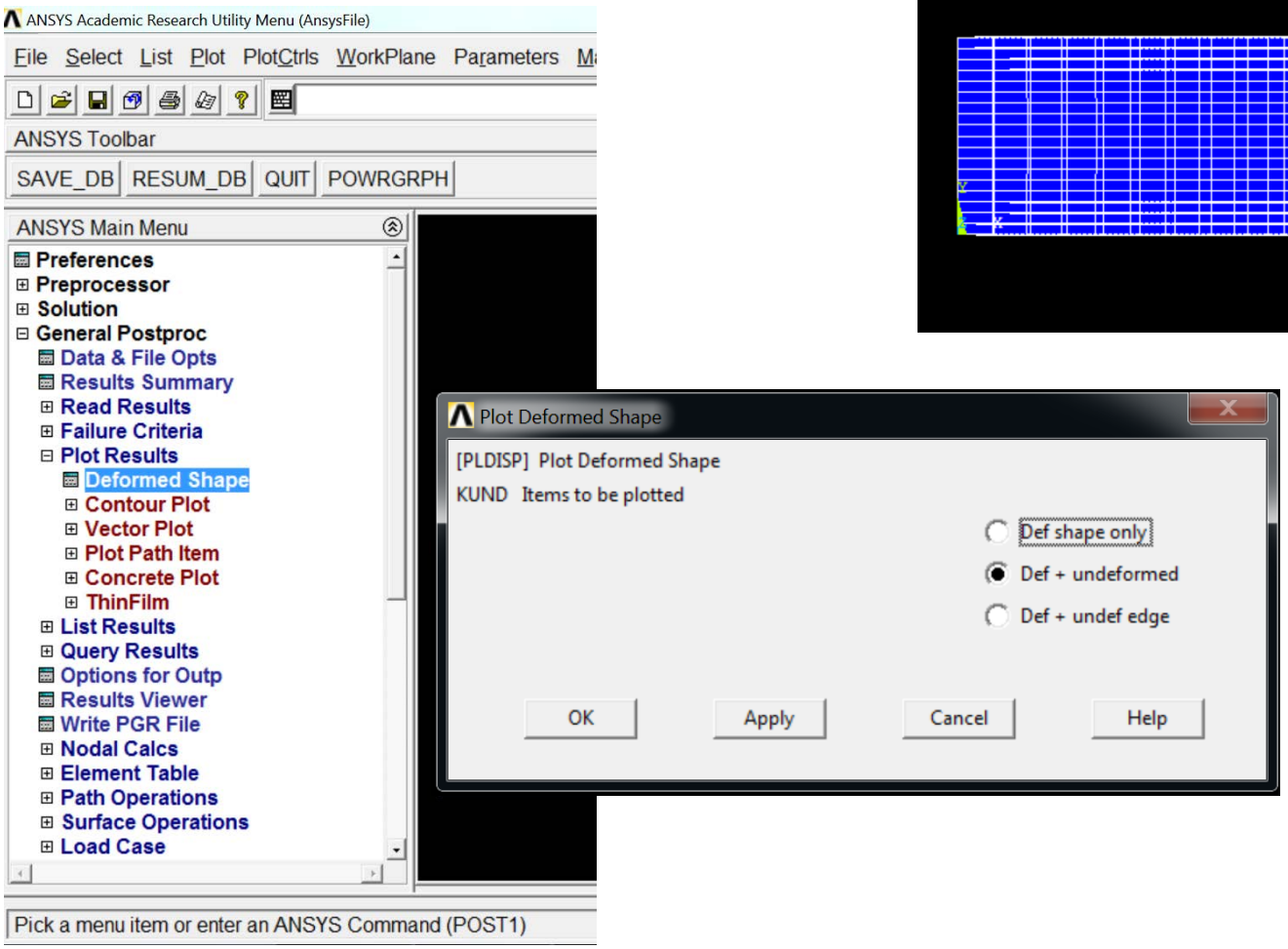
1) Solve

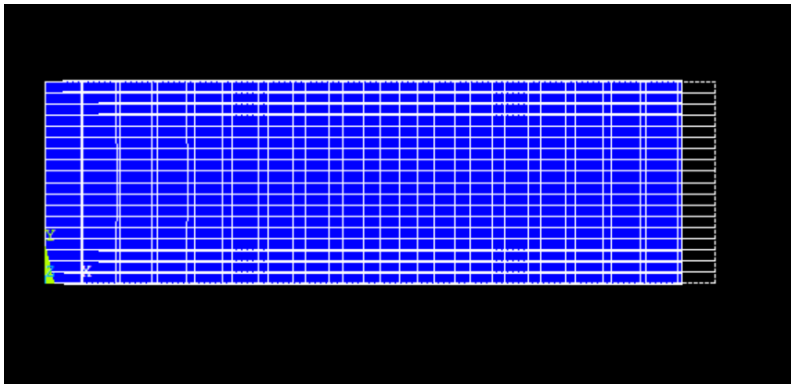
ANSYS Command: **solve**



Post processor

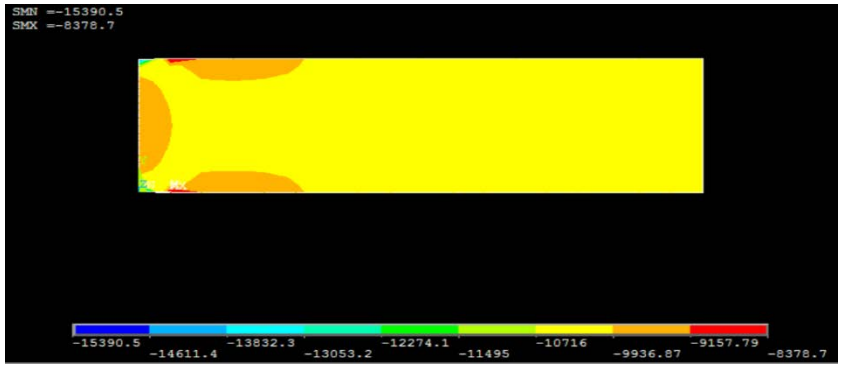
1) Extract Results (deformed shape)

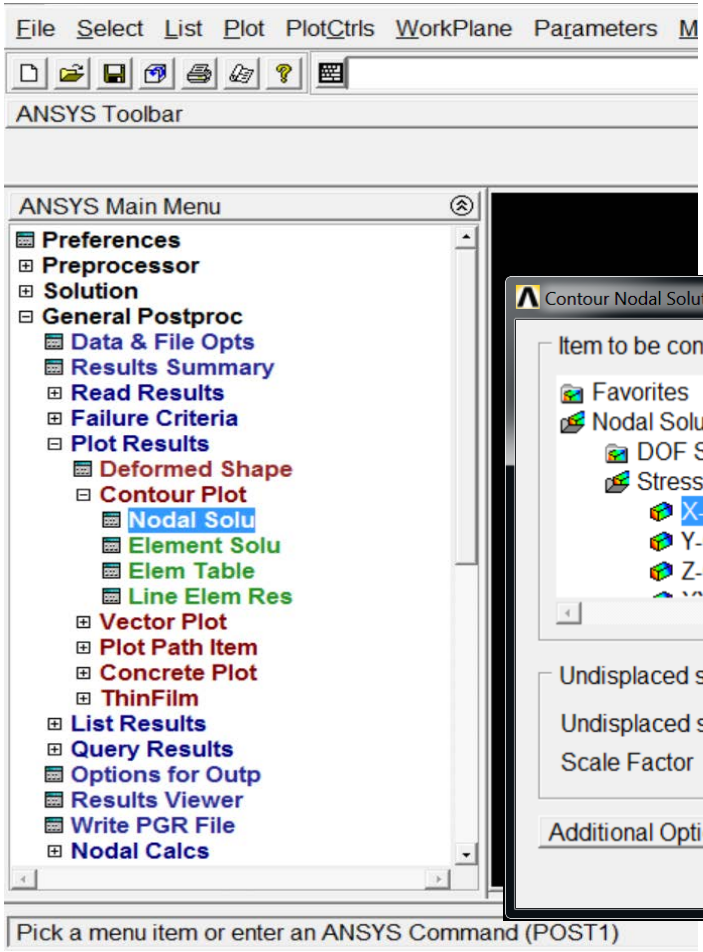


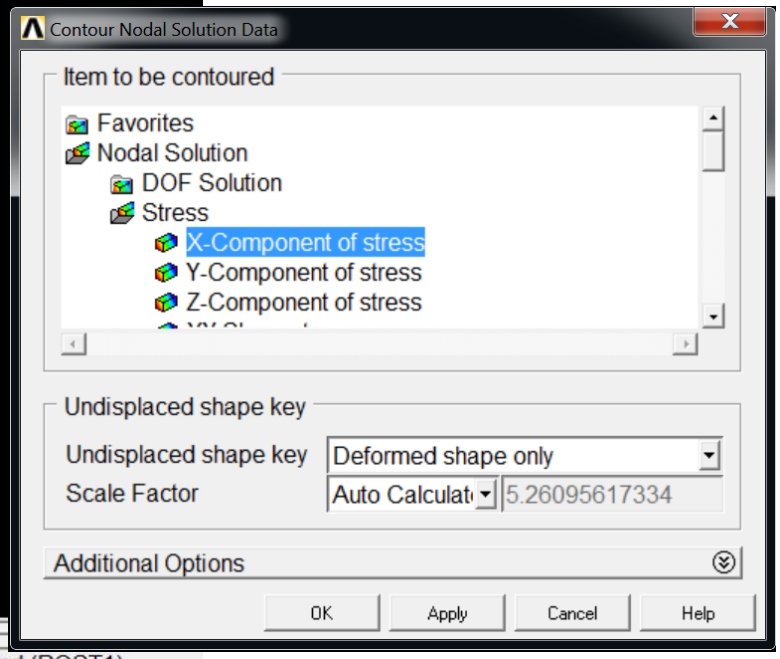


Post processor

1) Extract Results (plot results)

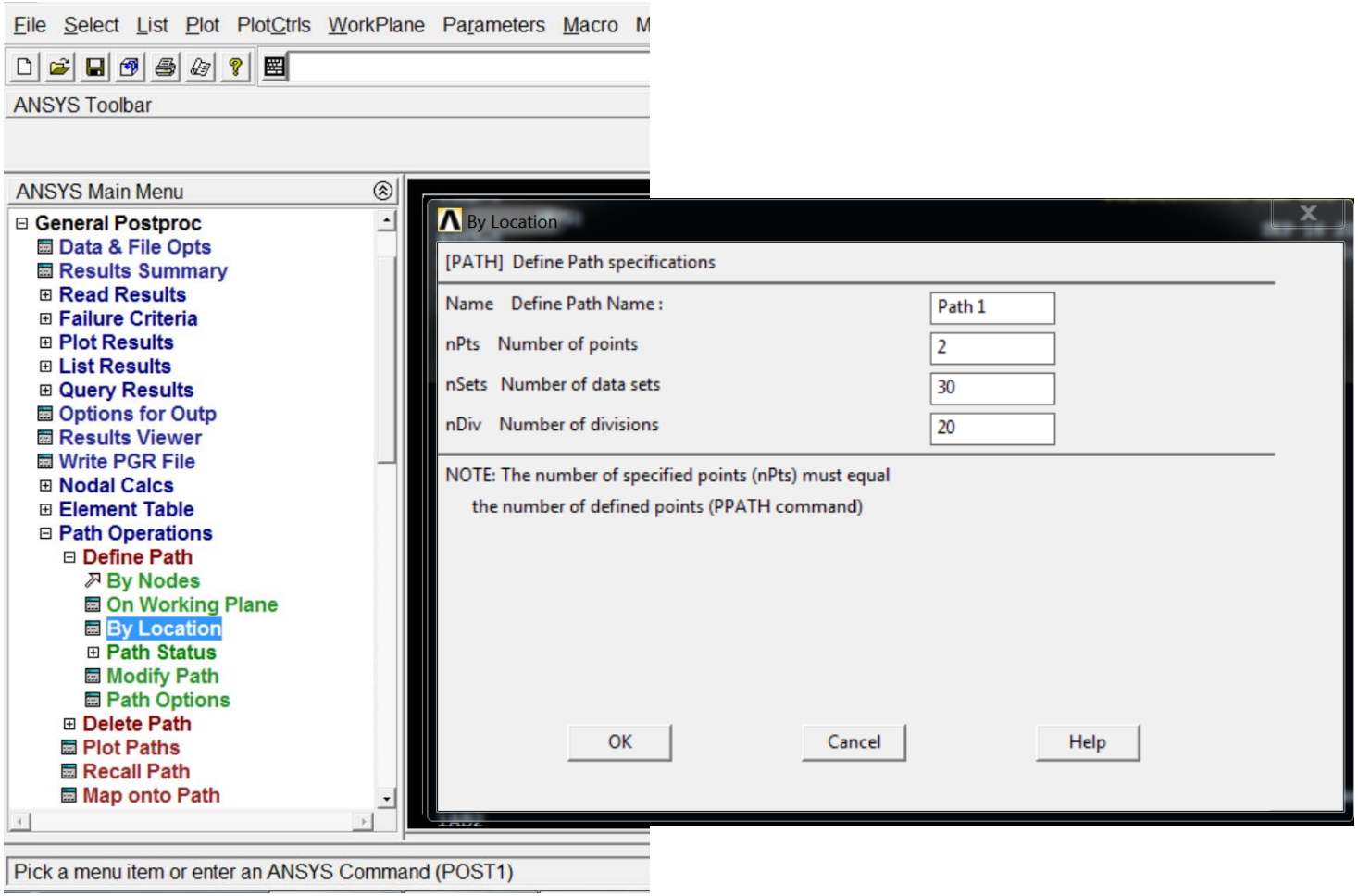






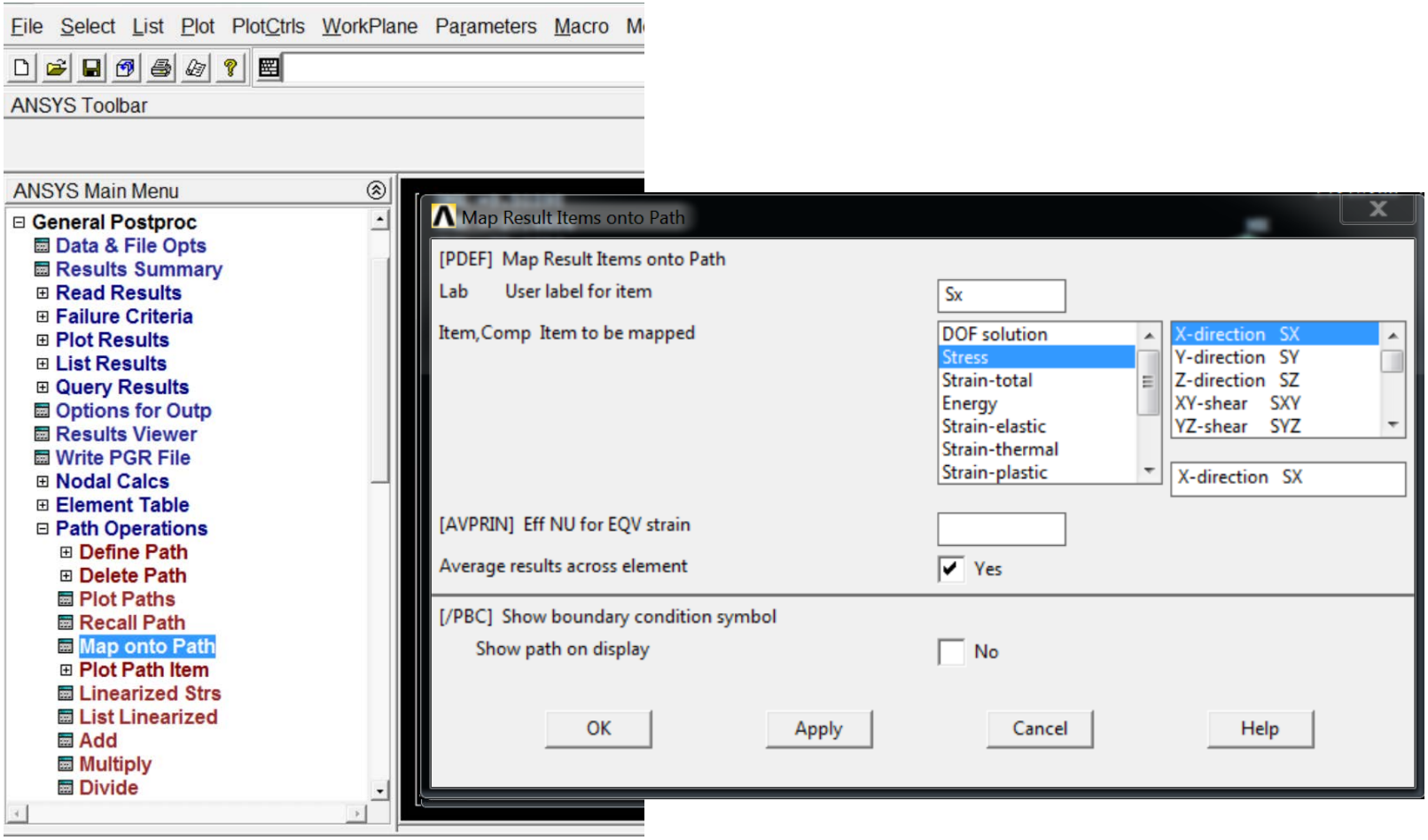
Post processor

1) Extract Results (path operations)



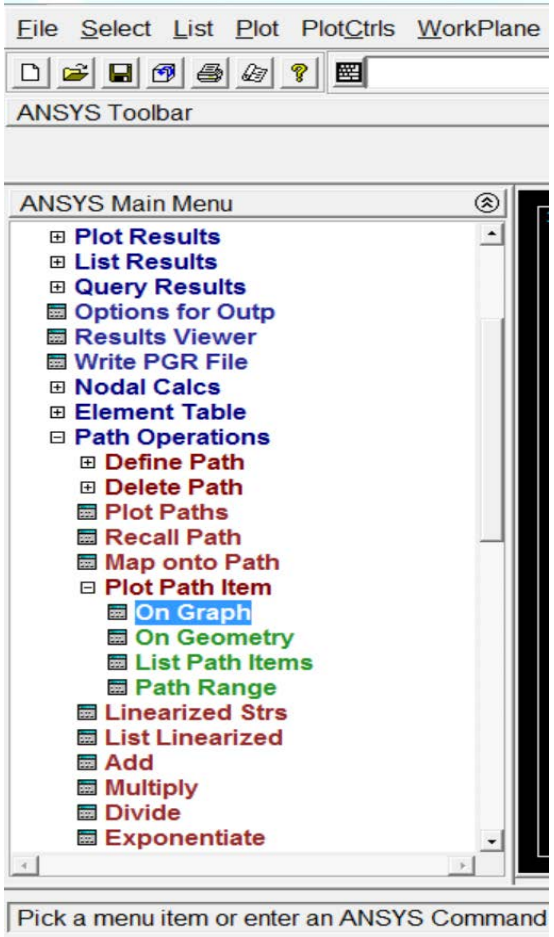
Post processor

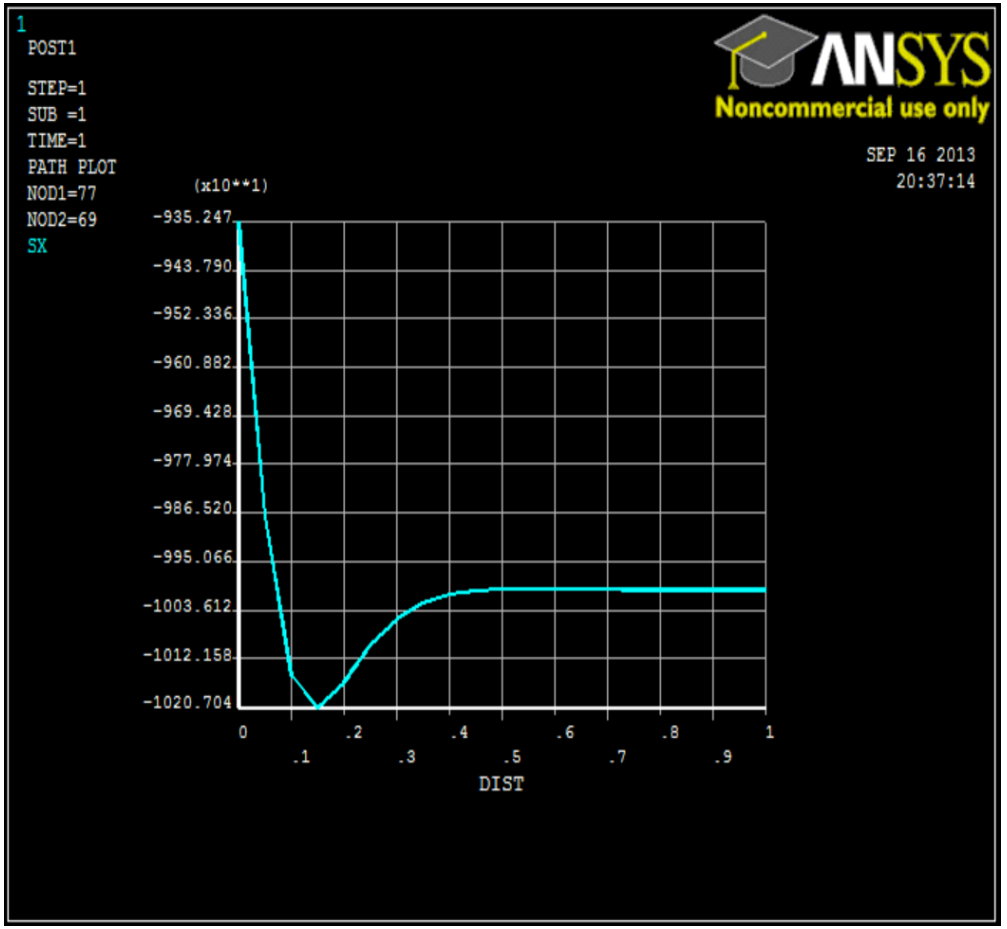
1) Extract Results (path operations)



Post processor

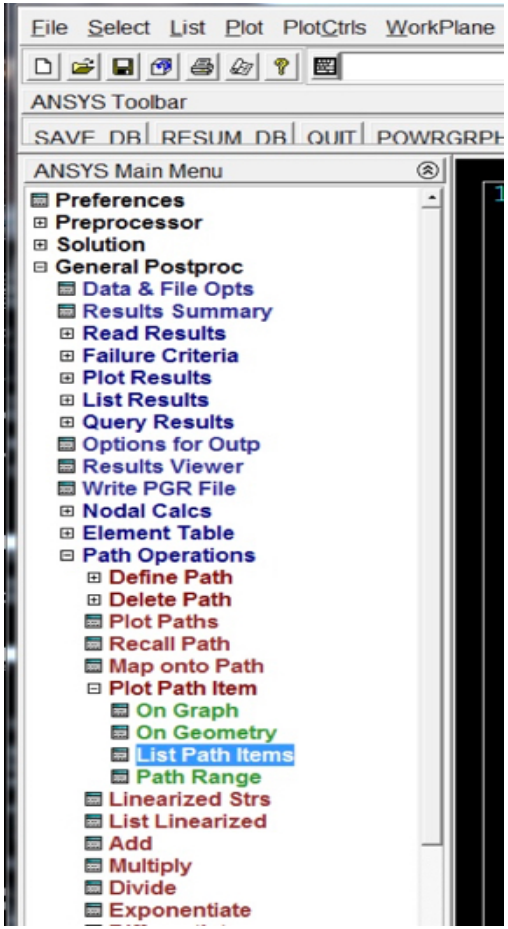
1) Extract Results (path operations)

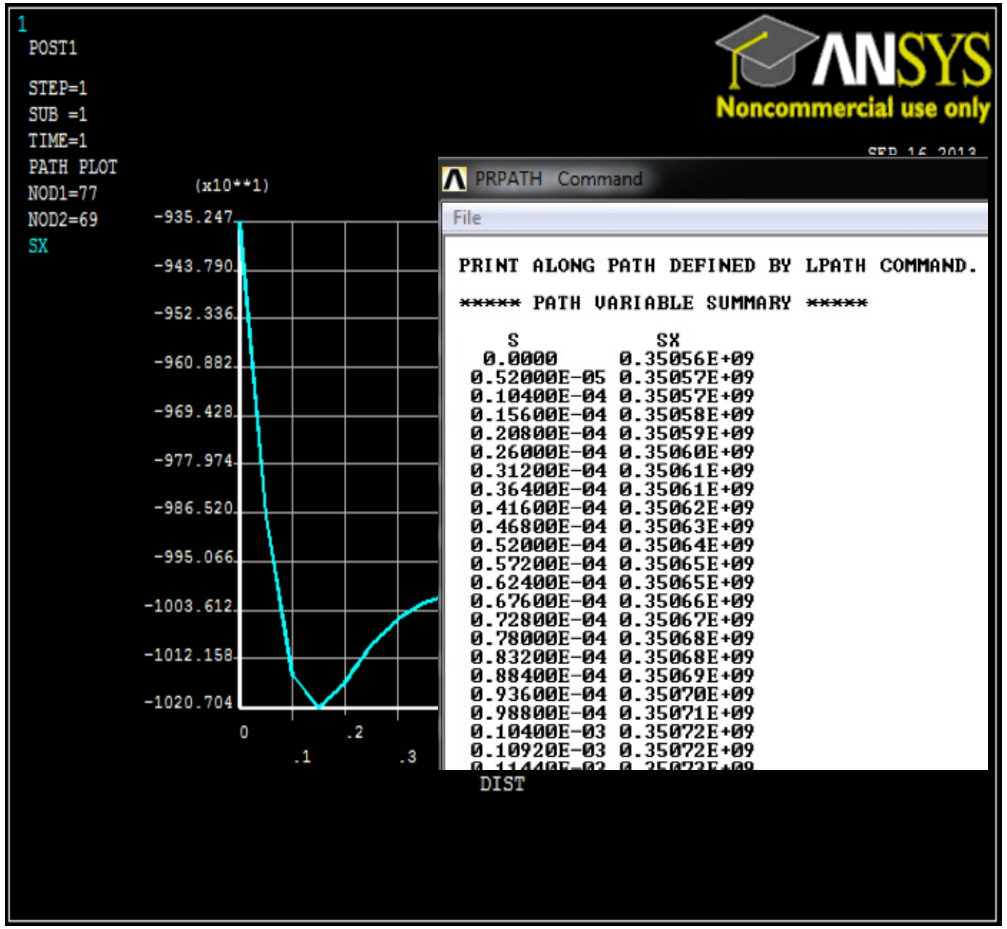




Post processor

1) Extract Results (list path items)





Post processor

2) Check the validity of the solution

You should always verify your results