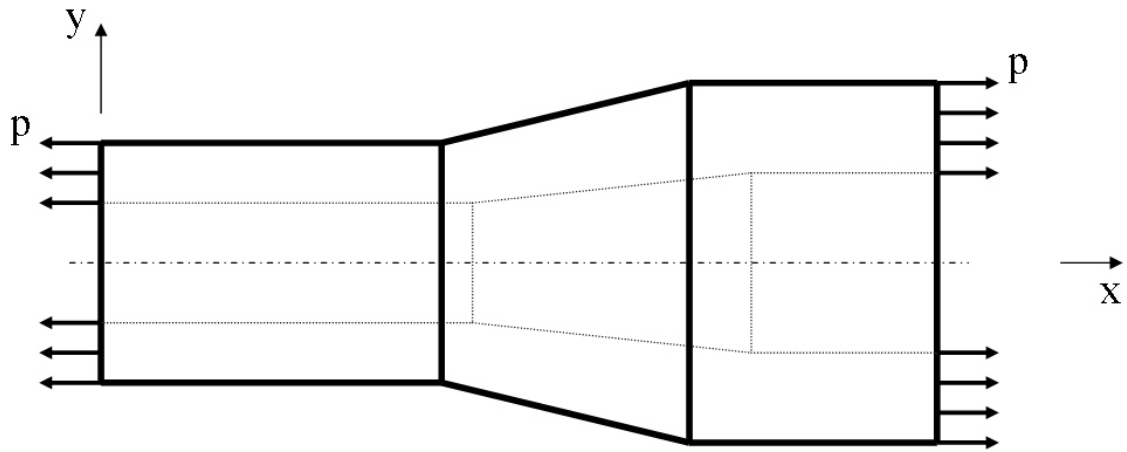
# Course in ANSYS

## Example0304

# Example – Drill pipe 3D



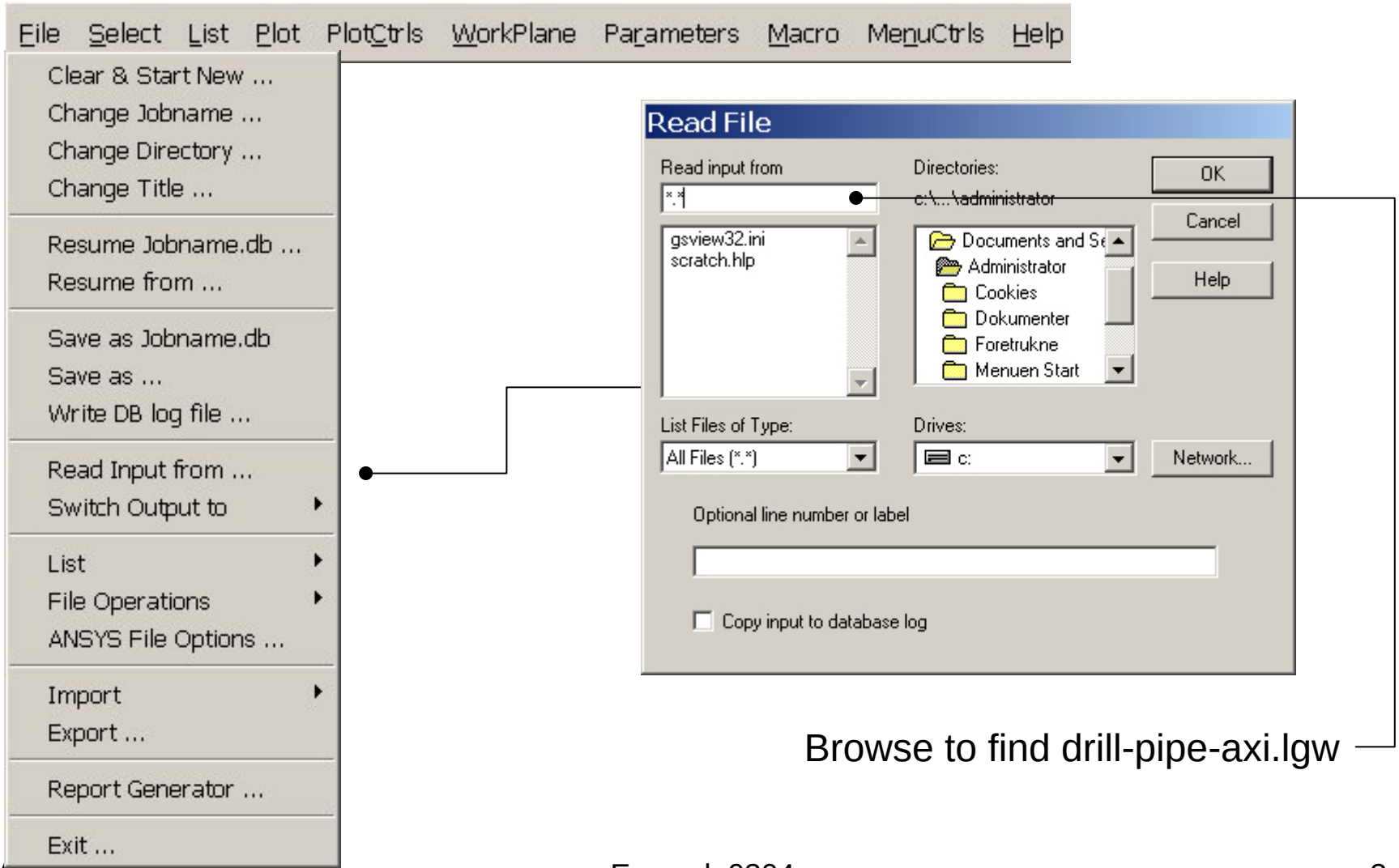

$E = 210000 N/mm^2$

$\nu = 0.3$

$p = 100 N/mm$

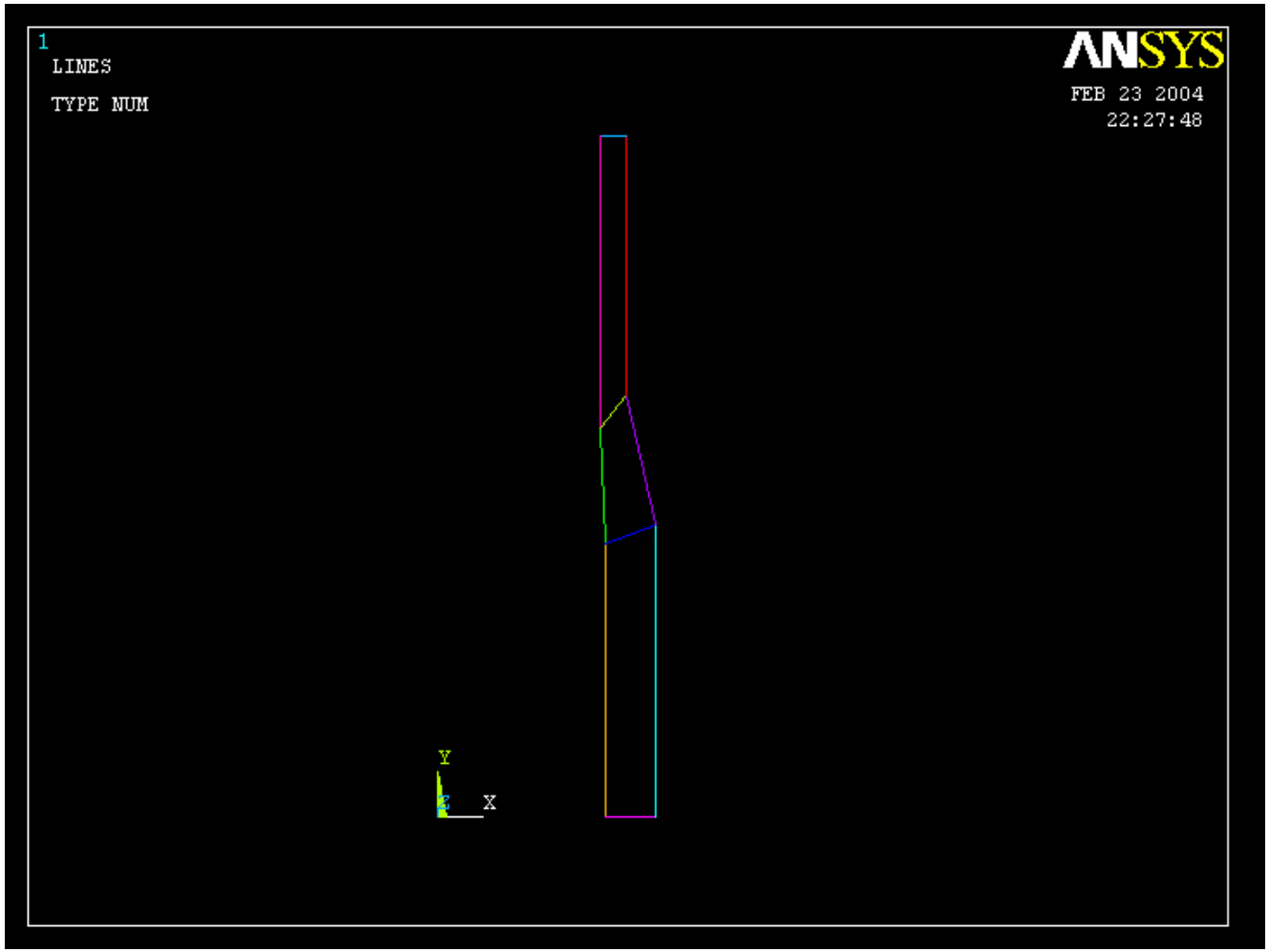
**Objective:**
Display the stress distribution
**Tasks:**
How should this be modelled?
Build an axi-symmetric model
**Topics:**
Element type, Real constants, modeling,
Plot results, output graphics

# Example – Read Input from

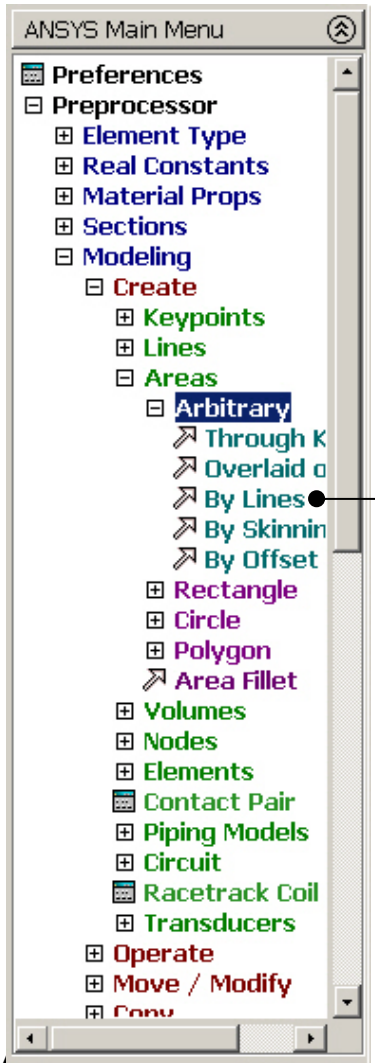


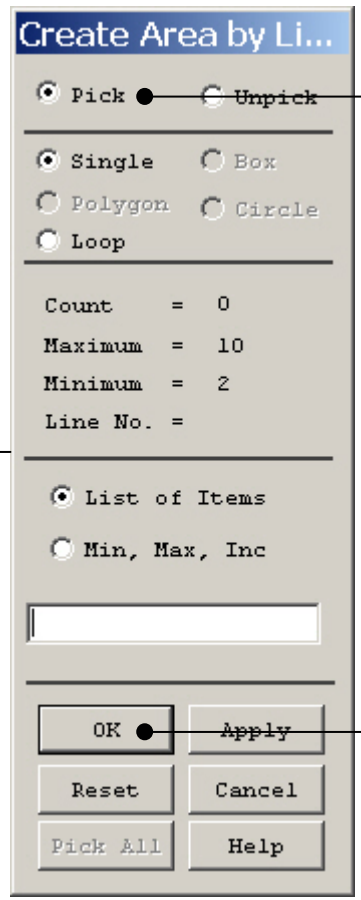

Browse to find drill-pipe-axi.lgw

# Example – Read Input from



# Example – Create Areas by line

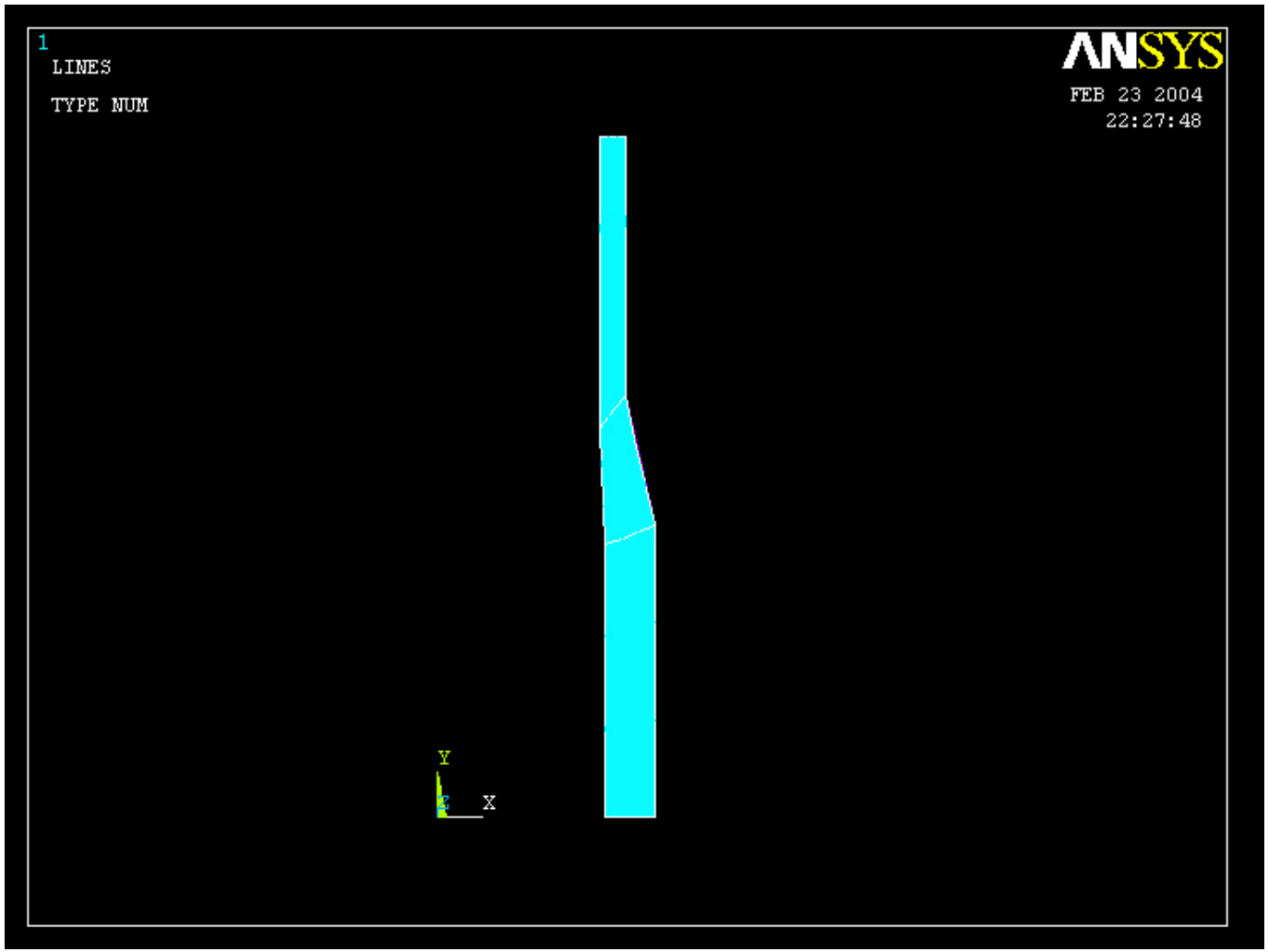



Select All lines

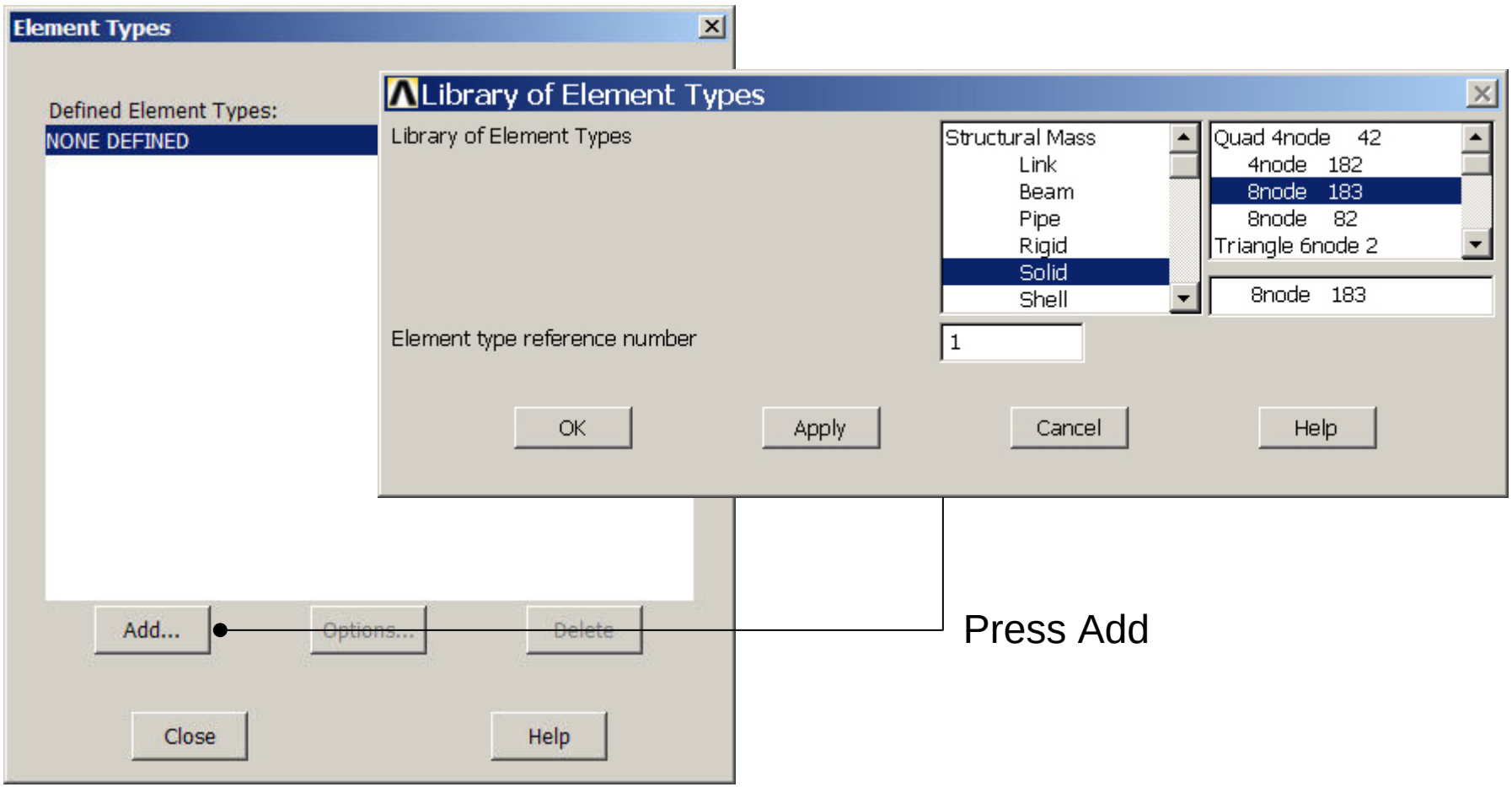
Press OK to finish

# Example – Create Areas by line



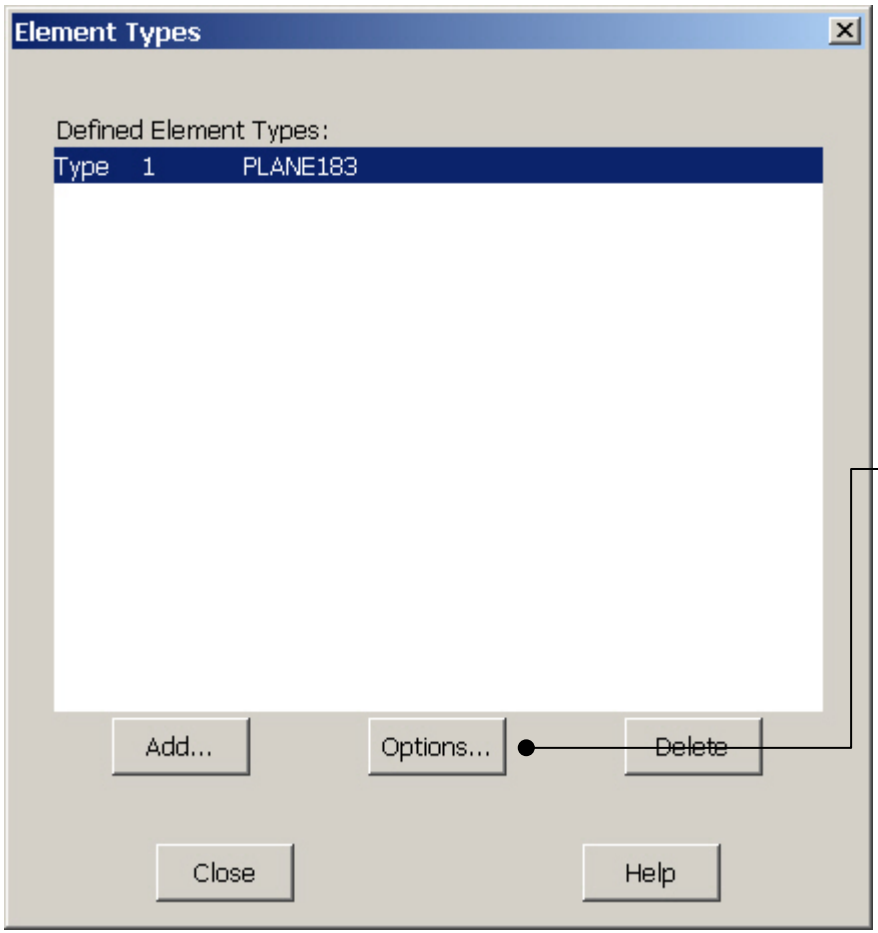
# Example – Element Type

**Preprocessor > Element Type > Add/Edit/Delete**



# Example - Element Type

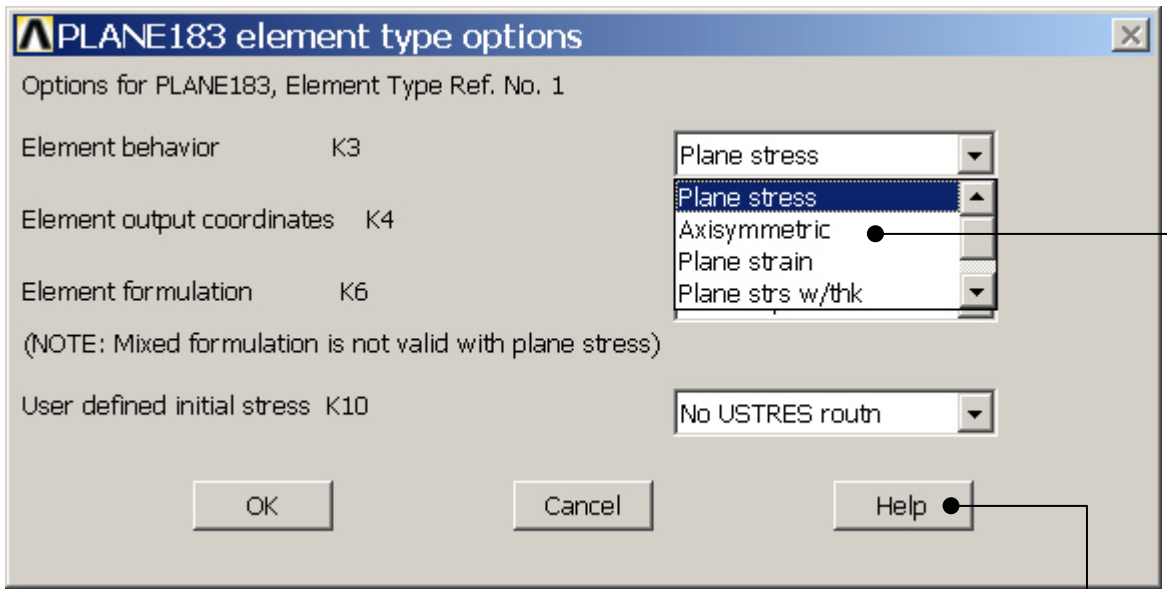
**Preprocessor > Element Type > Add/Edit/Delete**




Press Options

# Example - Element Type

**Preprocessor > Element Type > Add/Edit/Delete**




Select Axisymmetric

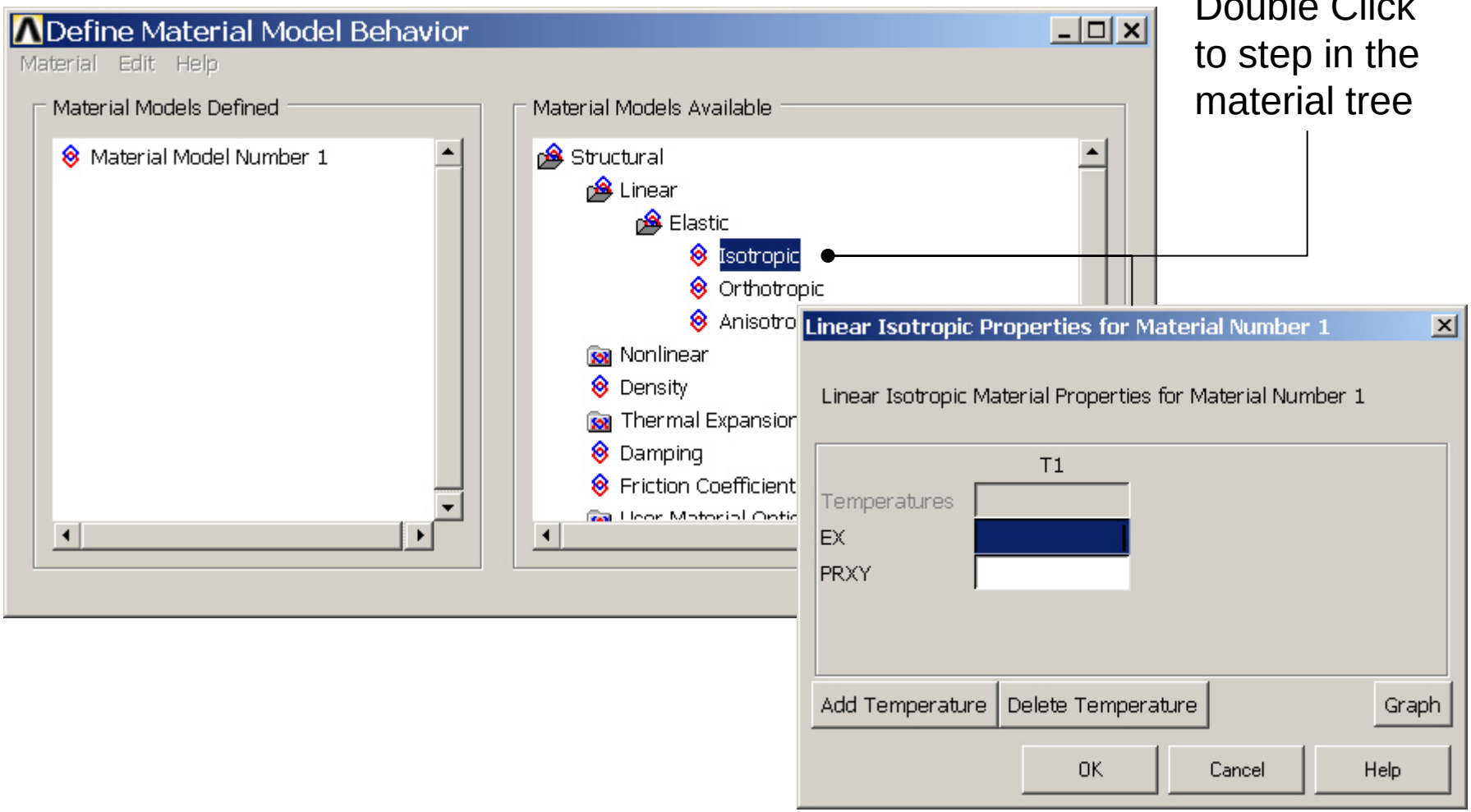
Press Help to learn more about the element.

# Example – Real Constants

No Real Constants are necessary for axi-symmetric models!

# Example - Material Properties

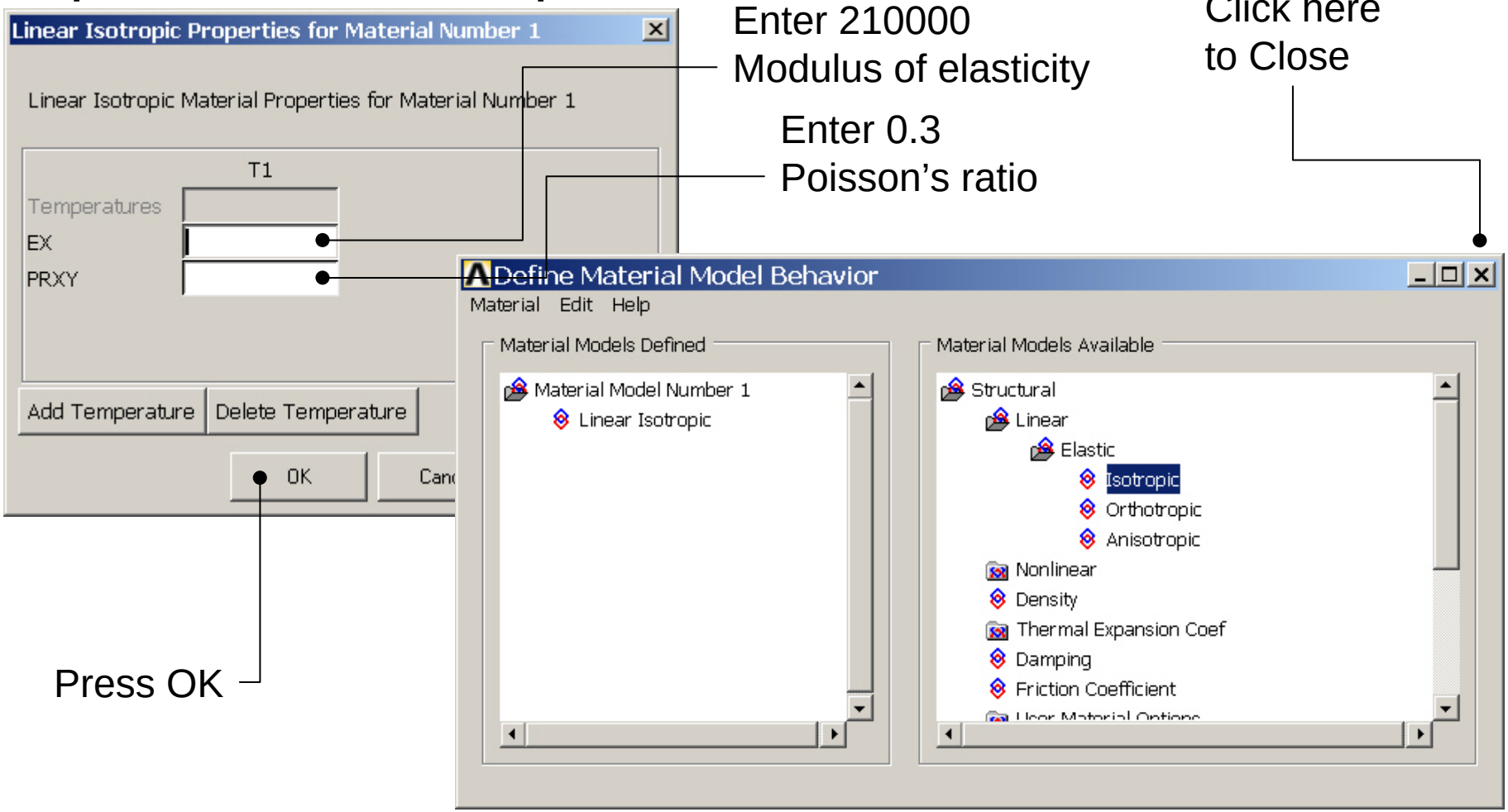
**Preprocessor > Material Props > Material Models**




Double Click to step in the material tree

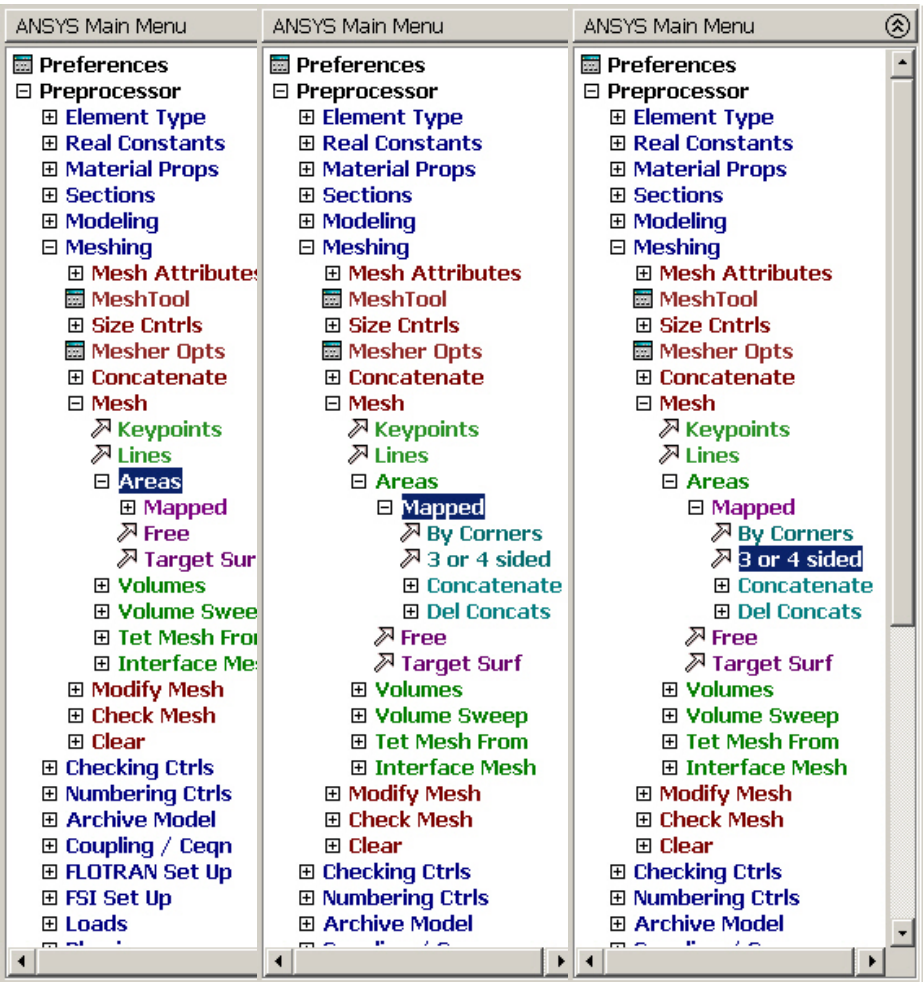
# Example - Material Properties

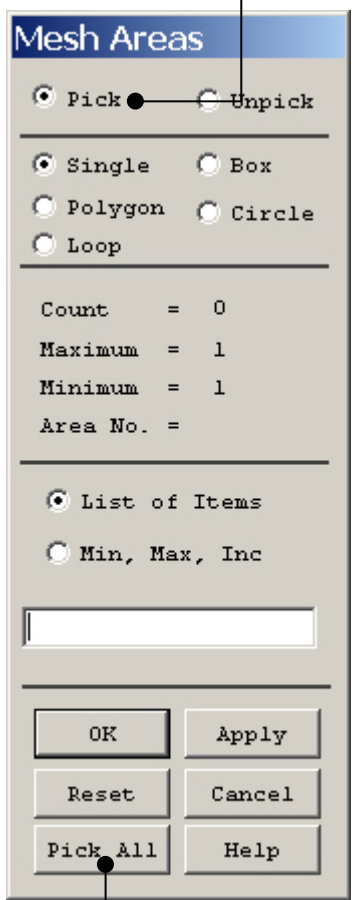
**Preprocessor > Material Props > Material Models**



# Example - Meshing

**Preprocessor > Meshing > Mesh > Areas > Mapped > 3 or 4 sided**



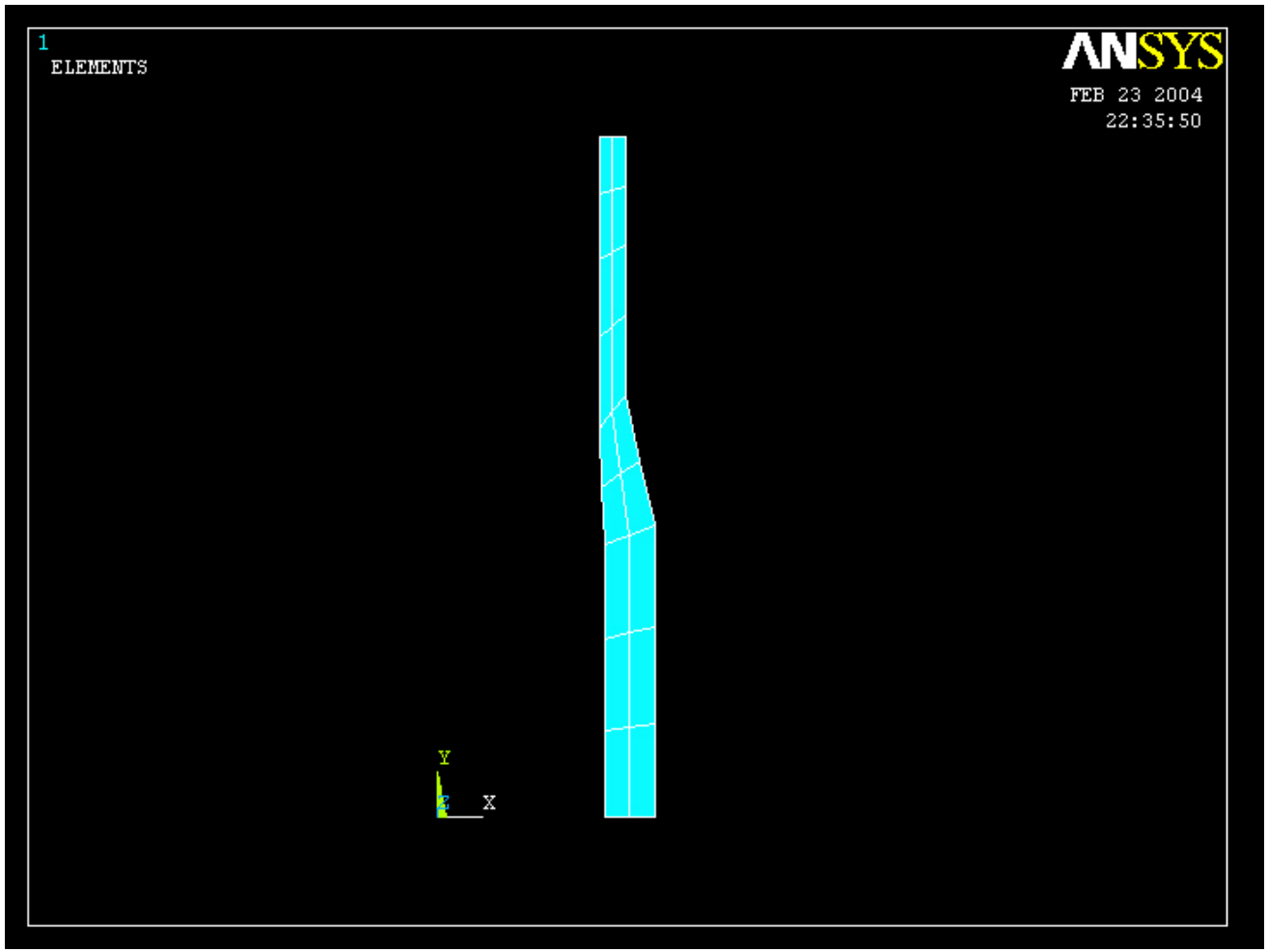




Select individual areas to be meshed

**NB**: It is often necessary to “Clear” the model for example if Element Type or model geometry is to be changed

Select all areas defined to be meshed

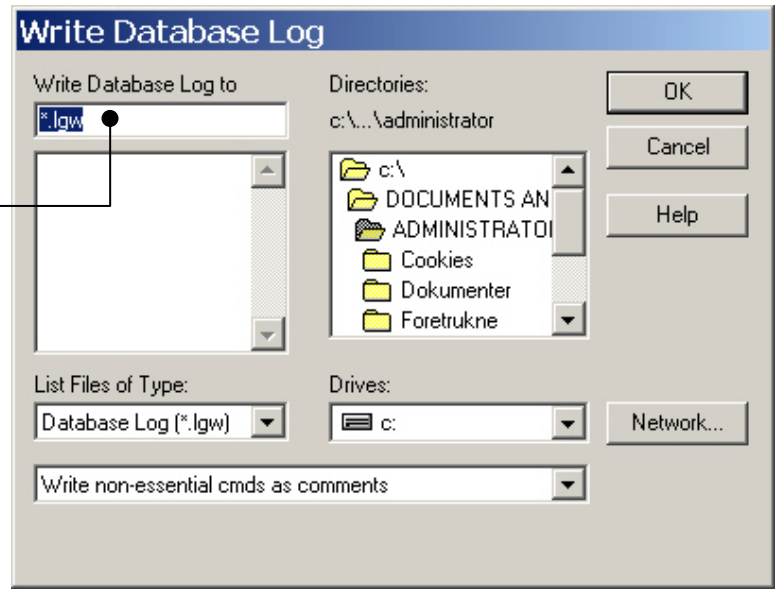
# Example - Meshing



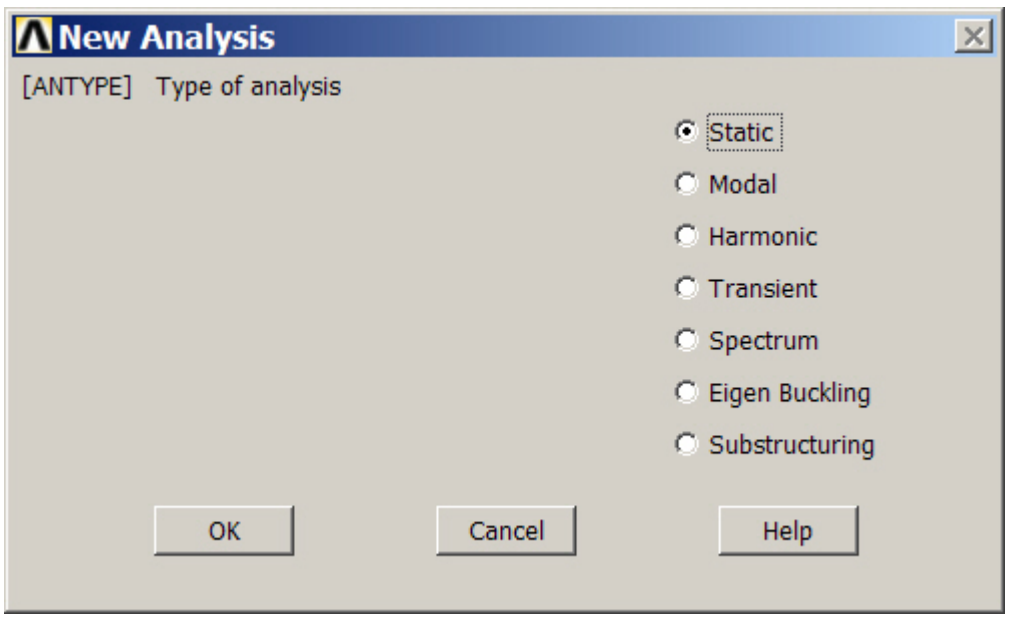
# Example – Analysis Type

**File > Write DB log file**

Enter “example0304.lgw”

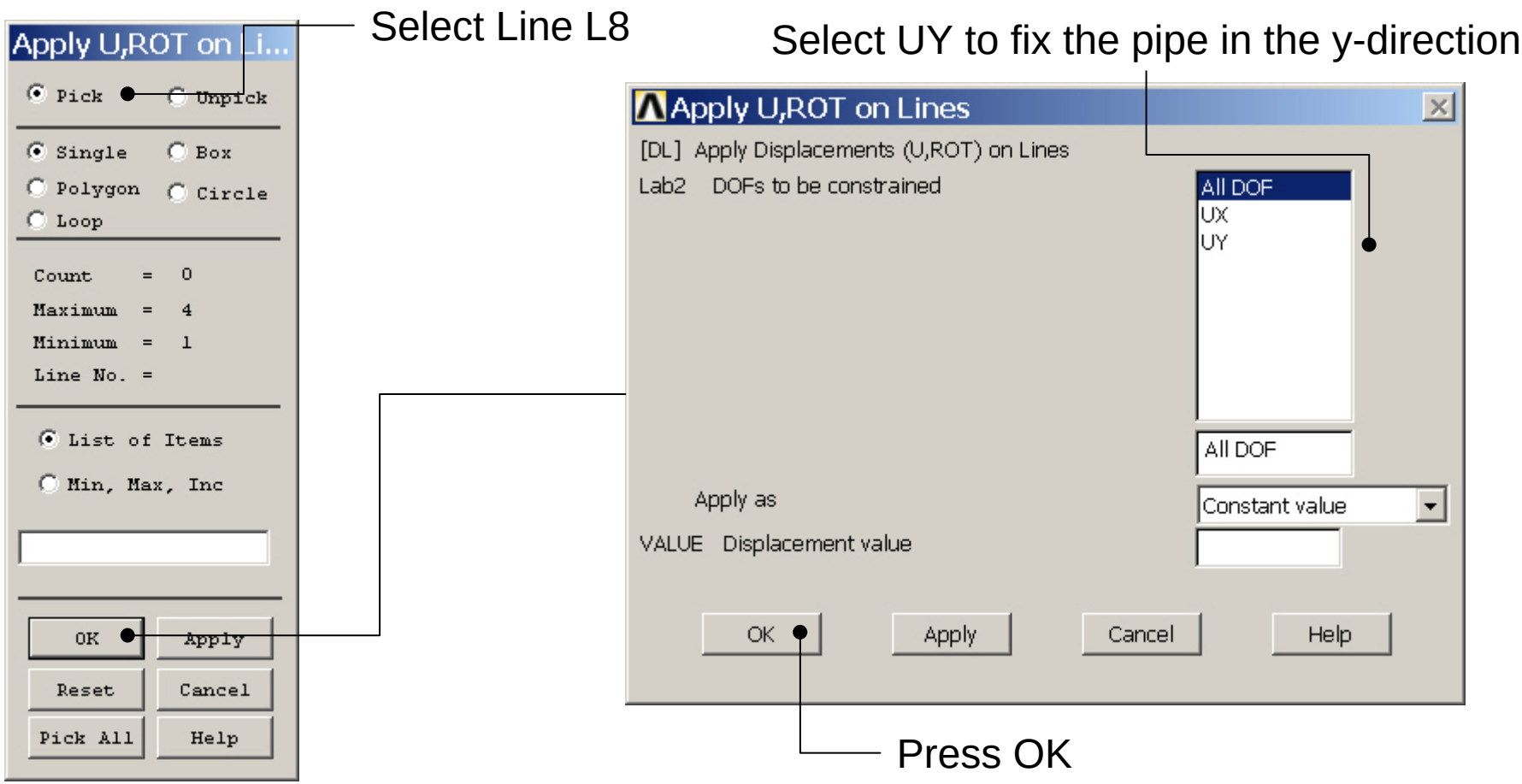



**Solution > Analysis Type > New Analysis**



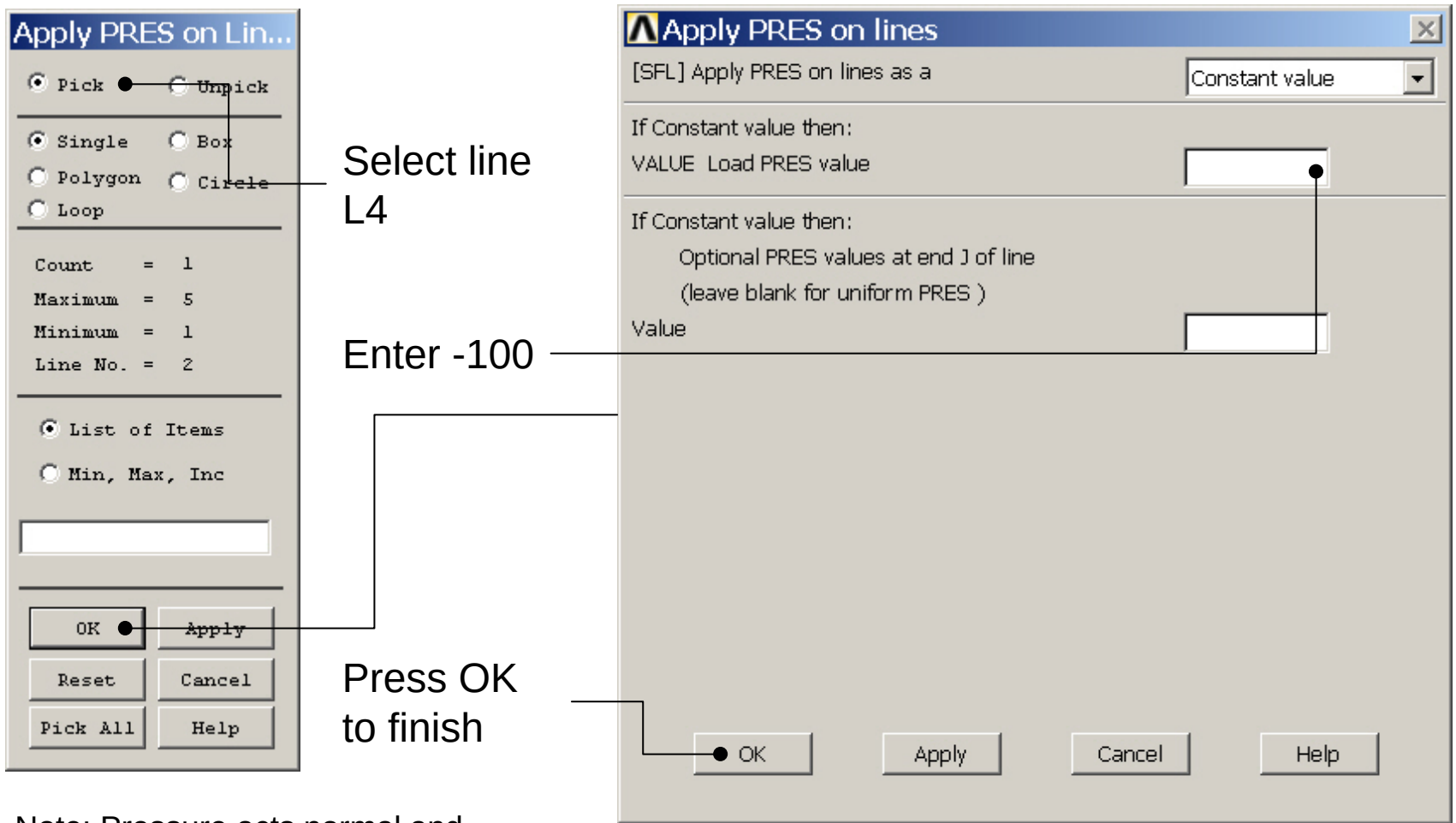
# Example – Define Loads

**Solution > Define Loads > Apply > Structural > Displacement > On Lines**



# Example – Define Loads

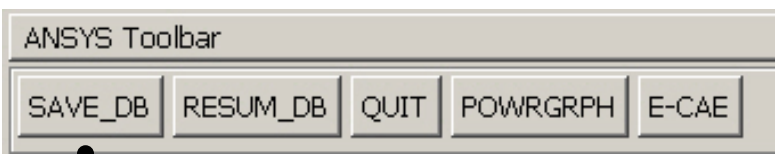
**Solution > Define Loads > Apply > Structural > Pressure > On lines**




Note: Pressure acts normal and inward to a surface

# Example - Save

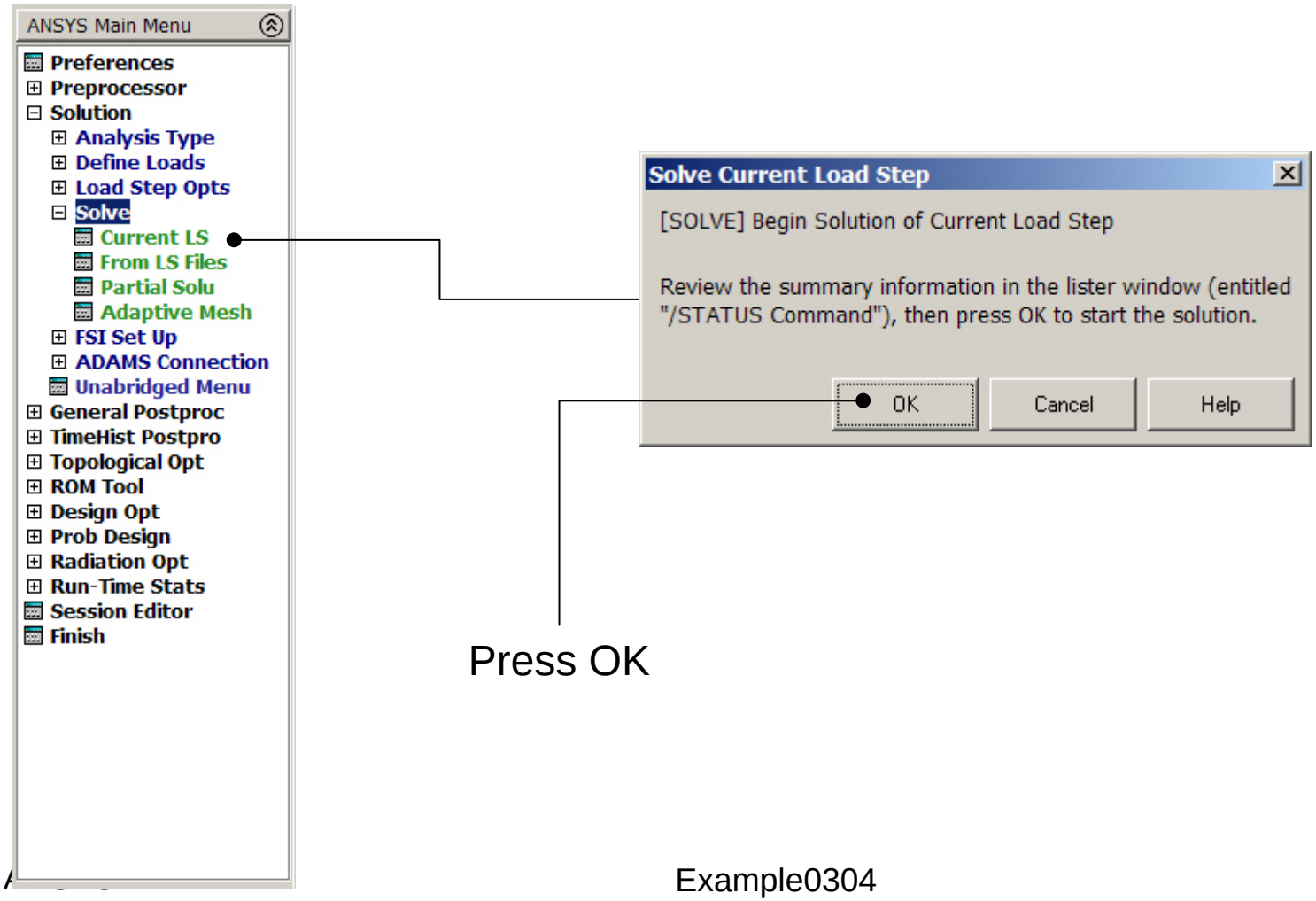

Display of Analysis model




Save the model

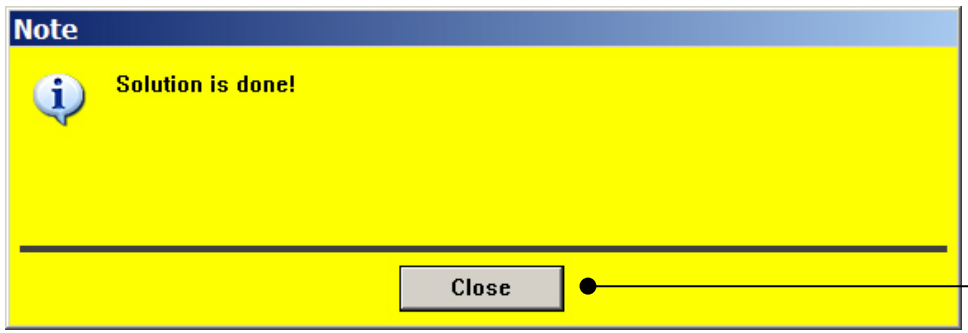
# Example - Solve

**Solution > Solve > Current LS**



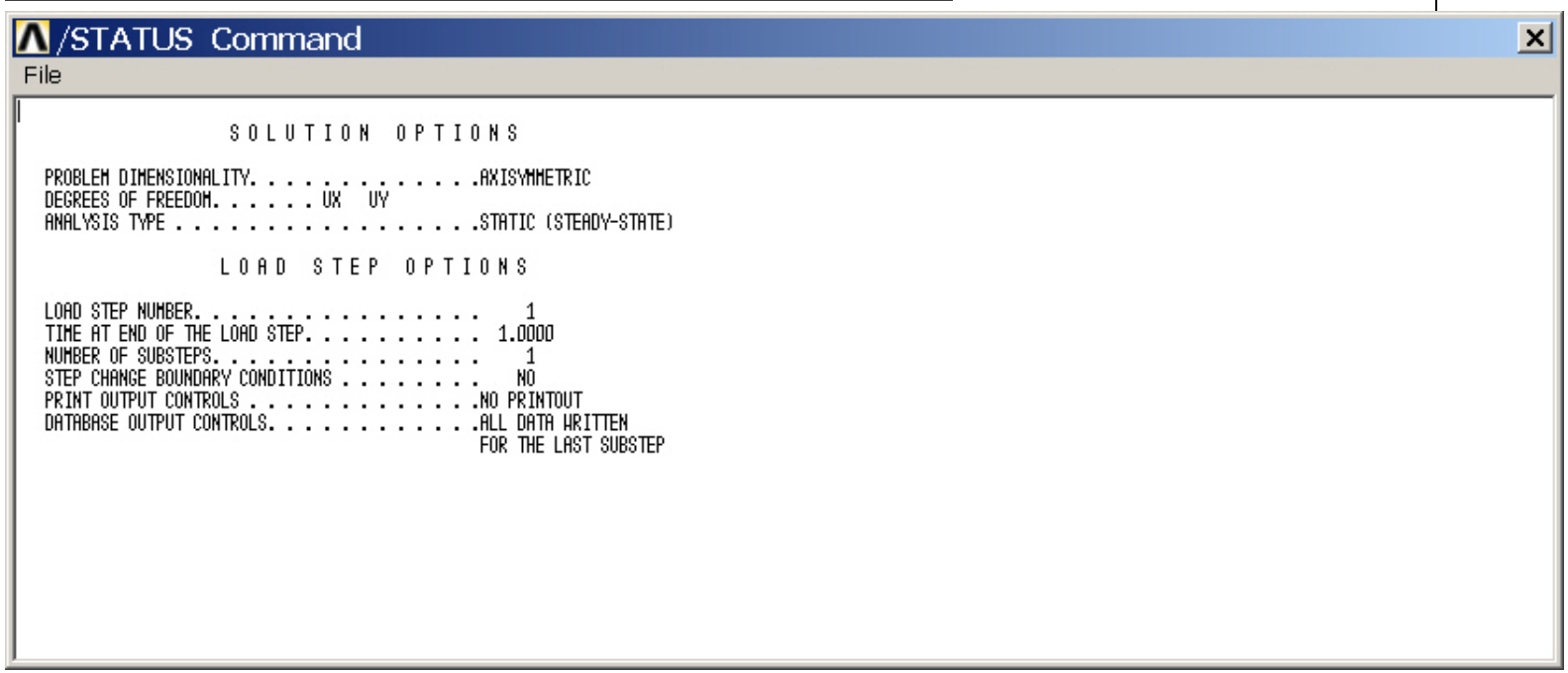

Press OK

# Example - Solve

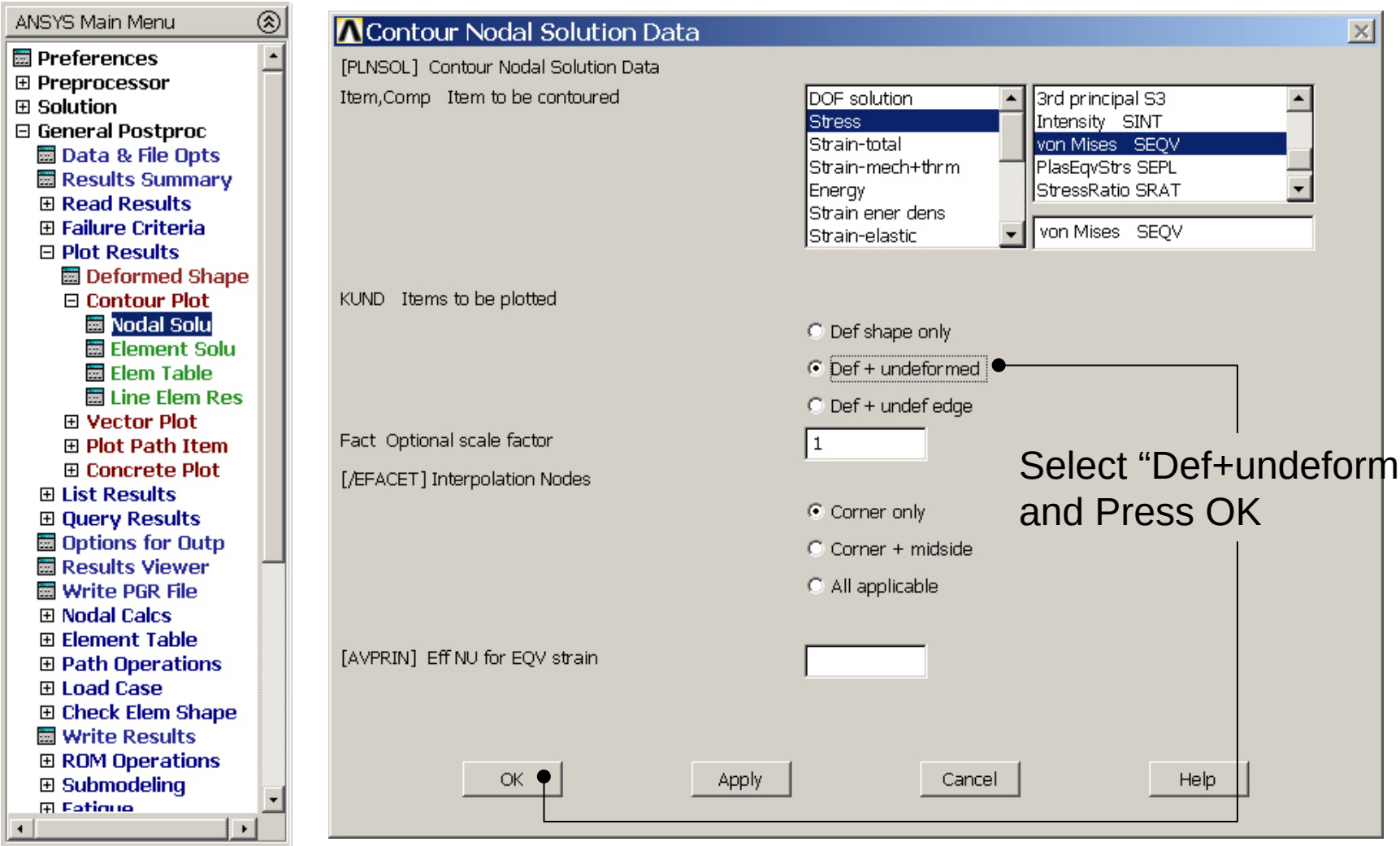



Press Close

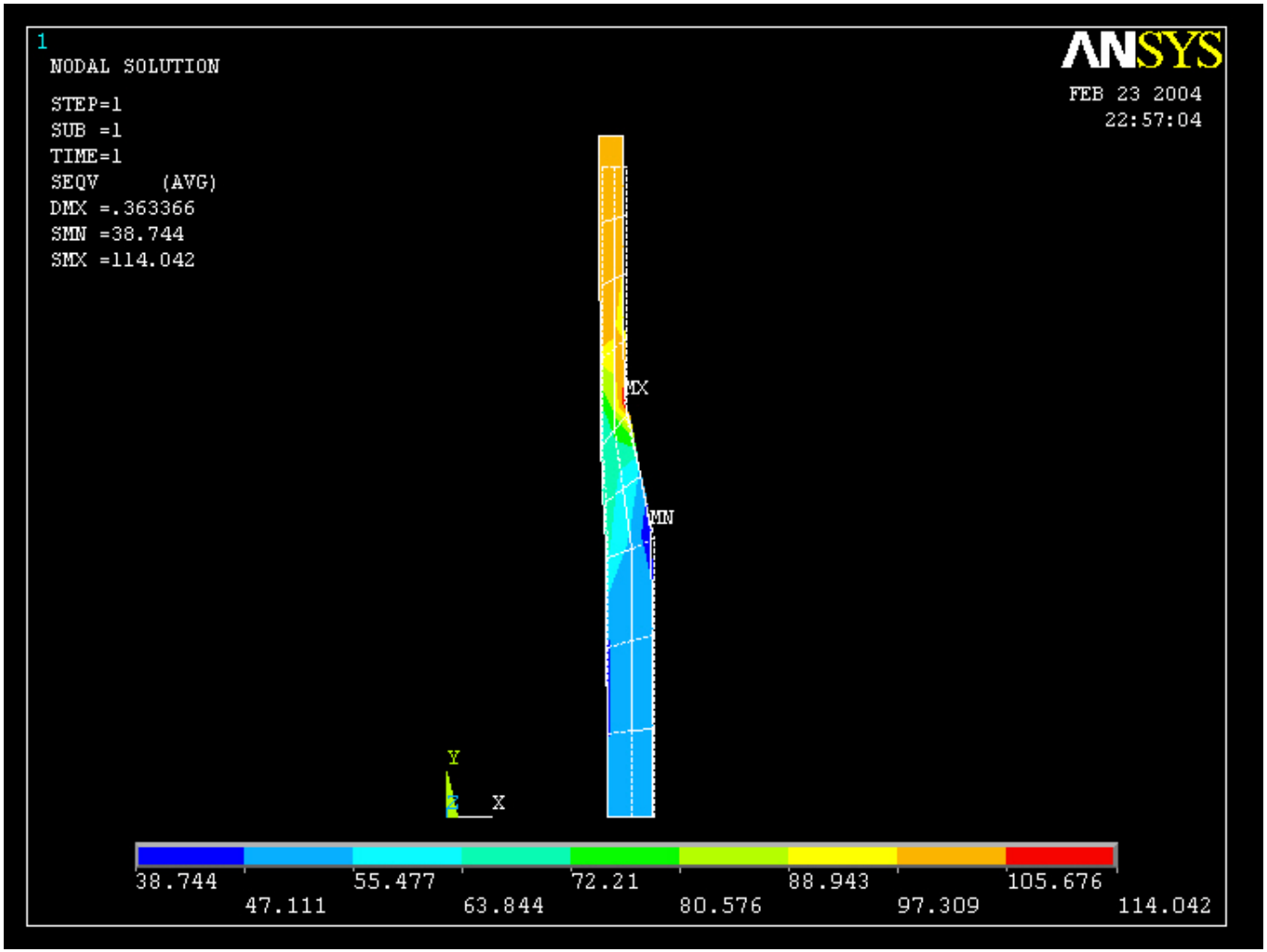
Press here
to Close



# Example - PostProcessing



# Example - PostProcessing




Read Maximum displacement: DMX