Steps for the two-D solid-element model:

Model Development:

ansys -g -j 2Dsolid &

1. Set Preference:
   Preferences - Structural = on - OK

2. Key Points:
   Preprocessor - Modeling.Create - Keypoints - In Active CS
   Keypoint number = 1, X,Y,Z = 0., --3., 0. -- > Apply
   Keypoint number = 2, X,Y,Z = 0., 3., 0. -- > Apply
   Keypoint number = 3, X,Y,Z = 24, 1.5, 0. -- > Apply
   Keypoint number = 4, X,Y,Z = 24, --1.5, 0. -- > OK

3. Lines:
   Preprocessor - Modeling.Create - Lines/lines - Straight line
   Now left click points 1 and 2;
   Then left click points 2 and 3;
   Then left click points 3 and 4;
   Then left click points 4 and 1;
   -> Cancel

4. Surface:
   Preprocessor - Modeling.Create - Areas/Arbitrary - By lines
   Pick (by left click) the four lines
   Apply - Cancel

5. . Define materials
   Preprocessor - Material props – Material models – Structural
   - Linear – Elastic – Isotropic
   Young's modulus EX = 30e6
   Poisson's ratio PRXY = 0.0

   - Density
   Density DENS = 0.2836
   OK

Material - Exit

6. Select Mesh Type:
   Preprocessor - Element Type - /Add/edit/Delete - Add
   Select "Structral Solid" and "Quad 4node 42"
   OK
   Options - Element behavior = Plane strs w/thk - OK
   Close

   Preprocessor - Real Constants - /Add/edit/Delete - Add - OK
   THK = 1.0 - OK - Close

7. Meshing:
   Preprocessor - Meshing/size Cntrls - Lines/Picked lines
   Pick two long lines - Apply - NDIV = 2 - OK
   Preprocessor - Meshing/size Cntrls - Lines/Picked lines
   Pick two short lines - Apply - NDIV = 1 - OK
   Close "the size Cntrls window"

   Preprocessor - Meshing/Mesh - Areas/Free
   Pick the area - OK

8. Apply BCs and loads:

   Solution -Loads/Apply - Displacement - On nodes
   Pick the two nodes on the left
   OK - Lab2 = All DOF & Value =0.0 - OK

   Solution -Loads/Apply - Force/Moment - On nodes
   Pick the two nodes in the middle
   OK
   Lab = FX, Value = 50 - OK

   Solution -Loads/Apply - Gravity
   ACELX= -- 1.0, ACELY=0.0, ACELZ=0.0
   OK

9. Solve:
   Solution - Solve/Current LS - OK - Close - Close

10. See the solution:
    General Postproc - List Results - Nodal Solution
    OK

Node	Vx	Vy
1	0.	0.
2	0.	0.
3	0.98749e-5	0.
4	0.92396e-5	0.
5	0.98749e-5	0.
6	0.92396e-5	0.