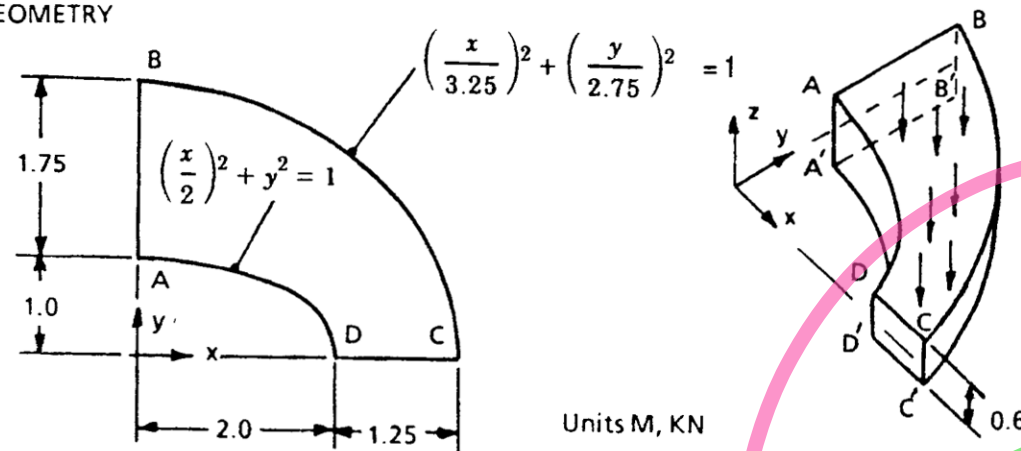
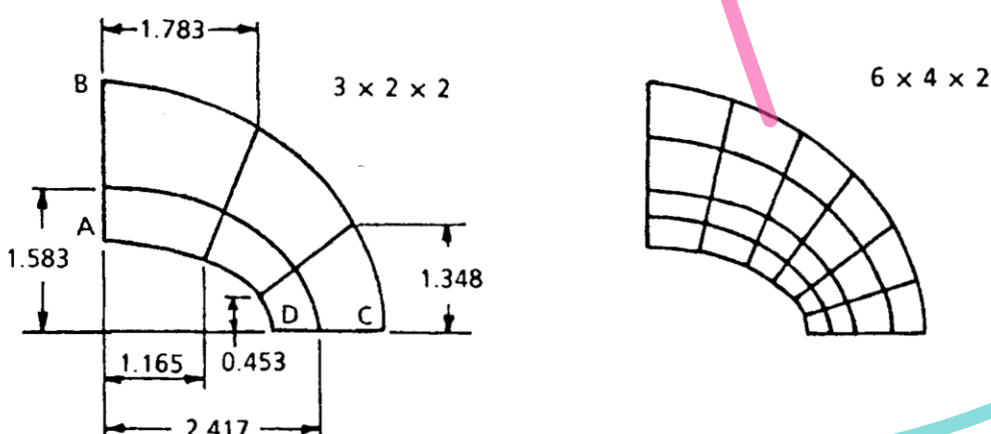


NAFEMS	THICK PLATE PRESSURE	Test No LE10	DATE / ISSUE 15 - 6 - 90/2
ORIGIN	NAFEMS report LSB2		
ANALYSIS TYPE	Linear elastic solid		
GEOMETRY			
LOADING	Uniform normal pressure of 1 MPa on the upper surface of the plate		
BOUNDARY CONDITIONS	Face DCD'C' zero y-displacement Face ABA'B' zero x-displacement Face BCB'C' x and y displacements fixed, z displacements fixed along mid-plane		
MATERIAL PROPERTIES	Isotropic, E = 210 x 10 <sup>3</sup> MPa, ν = 0.3		
ELEMENT TYPES	Solid hexahedra, wedges and tetrahedra		
MESHES			
OUTPUT	Direct Stress σ <sub>yy</sub> at point D	TARGET 5.38 MPa (mesh refinement)	

```

nafems-le10.fee — Kate
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nafems-le10.fee
# NAFEMS Benchmark LE-10: thick plate pressure
PROBLEM mechanical DIMENSIONS 3
READ_MESH nafems-le10.msh # mesh in millimeters

# LOADING: uniform normal pressure on the upper surface
BC upper p=1 # 1 Mpa

# BOUNDARY CONDITIONS:
BC DCD'C' v=0 # Face DCD'C' zero y-displacement
BC ABA'B' u=0 # Face ABA'B' zero x-displacement
BC BCB'C' u=0 v=0 # Face BCB'C' x and y displ. fixed
BC midplane w=0 # z displacements fixed along mid-plane

# MATERIAL PROPERTIES: isotropic single-material properties
E = 210e3 # Young modulus in MPa
nu = 0.3 # Poisson's ratio

SOLVE_PROBLEM # solve!

# print the direct stress y at D (and nothing more)
PRINT "sigma_y @ D = " sigmay(2000,0,300) "MPa"
  
```

```

examples : bash — Konsole <2>
gtheler@tom:~/feenox/examples$ feenox nafems-le10.fee
sigma_y @ D = -5.38136 MPa
gtheler@tom:~/feenox/examples$
  
```