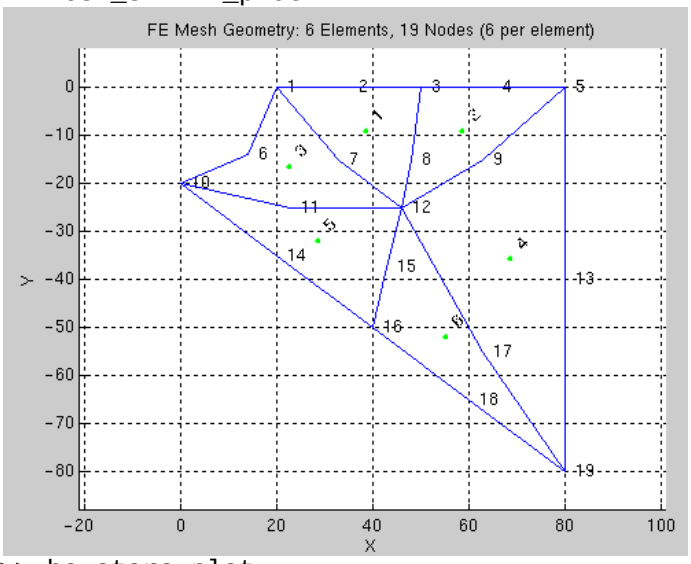
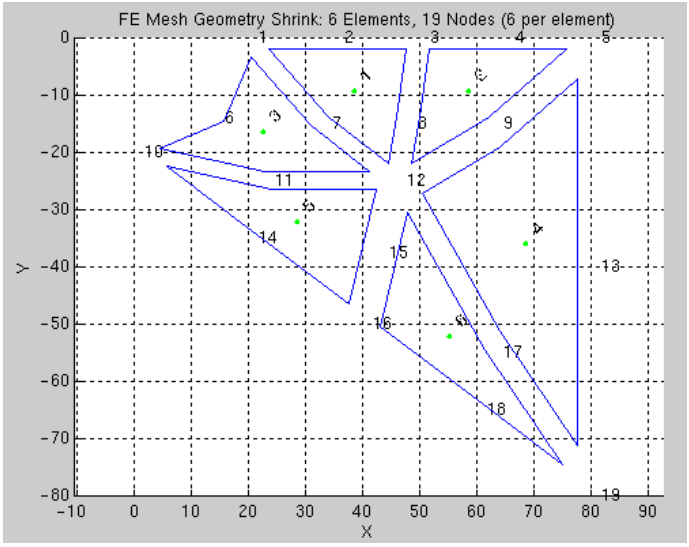
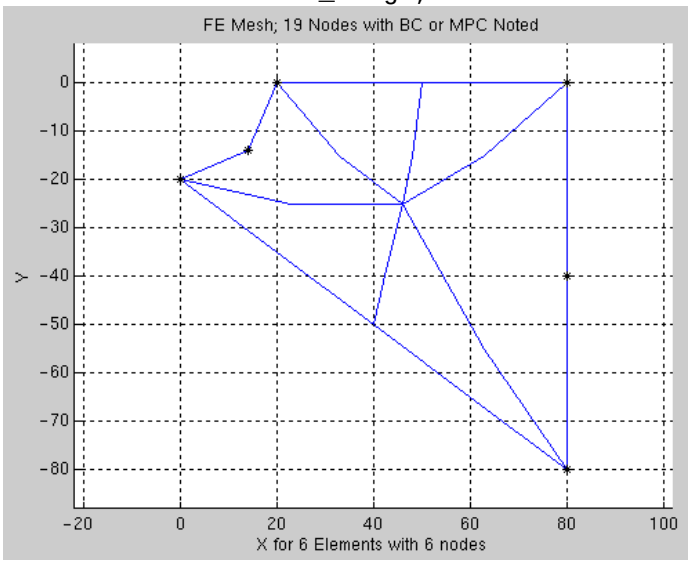
Hot Circular Hole in a Square, 1/8 symmetry (curved sides shown as two lines)

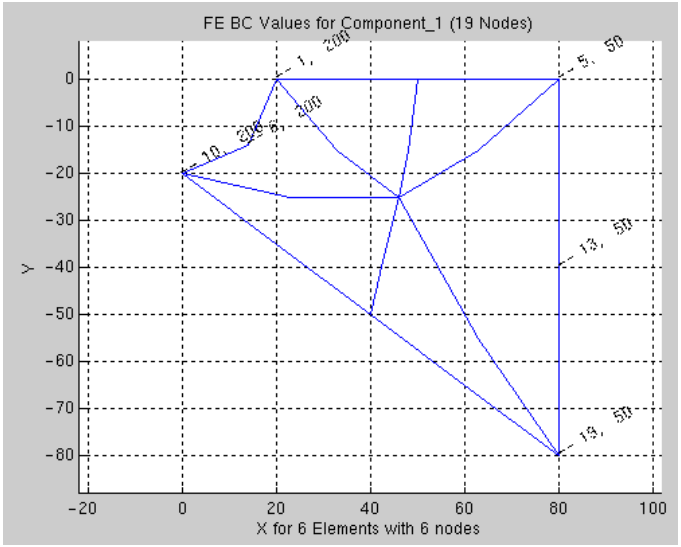
```
>> addpath /net/course-a/mech517/public_html/Matlab_Plots
>> mesh_plot
>> mesh_shrink_plot
```






```
>> bc_stars_plot
>> bc_values_input(1)
Read 6 nodes with bc_flags, and values
```






```
>> Area_T6_Poisson
Read 19 nodes.
(Echo of file msh_bc_xyz.tmp)
bc_flag, x-, y-coordinates
 1  20  0
 0  35  0
 0  50  0
 0  65  0
 1  80  0
 1  14.142  -14.142
 0  33  -15
 0  48  -15
 0  63  -15
 1  0  -20
 0  23  -25
 0  46  -25
 1  80  -40
 0  20  -35
 0  43  -37.5
```

```
 0  40  -50
 0  63  -55
 0  60  -65
 1  80  -80

(Echo of file msh_typ_nodes.tmp)
Read 6 elements with (ignored) type & 6 nodes each.
     1     1    12     3     7     8     2
     1     3    12     5     8     9     4
     1     1    10    12     6    11     7
     1    12    19     5    17    13     9
     1    10    16    12    14    15    11
     1    16    19    12    18    17    15

Applied Displacement Boundary Conditions: 6
(Echo of file load msh_ebc.tmp)
Node, DOF (1=u, 2=v, 3=r), Value.
     1     1   200
     6     1   200
    10     1   200
     5     1    50
    13     1    50
    19     1    50

(Echoing columns of file msh_properties.tmp)
Properties for all elements
Thermal conductivity        = 3
Heat Generation per volume  = 0
Thickness                   = 1

Temperature at 19 nodes
 1 200
 2 148.655
 3 110.594
 4 79.3444
 5 50
 6 200
 7 147.339
 8 112.403
 9 82.4716
 10 200
 11 160.189
 12 110.939
 13 50
 14 152.349
 15 107.334
 16 100.555
 17 68.3796
 18 65.805
 19 50

Post-prossessing Gradients and Reaction:
Element, Point, Coordinates      1 1 25.672 -3.44244
Element, Point, Flux Vector      1 1 10.3944 -1.66151
Element, Point, Coordinates      1 2 34.0152 -14.2446
Element, Point, Flux Vector      1 2 8.19417 -1.88313
Element, Point, Coordinates      1 3 43.7717 -21.551
Element, Point, Flux Vector      1 3 5.82499 -1.98149
Element, Point, Coordinates      1 4 46.328 -14.2446
Element, Point, Flux Vector      1 4 6.01328 -0.940942
Element, Point, Coordinates      1 5 46.5563 -3.44244
. . .
Element, Point, Coordinates      6 7 55.3333 -52.7778
Element, Point, Flux Vector      6 7 3.54561 -1.93641

>> color_result(1)
```

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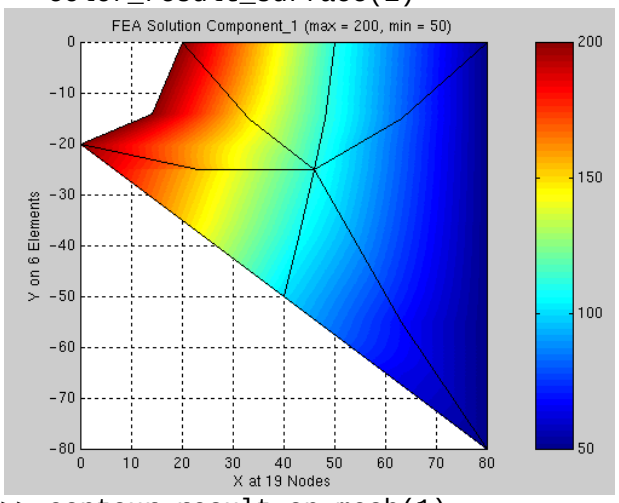
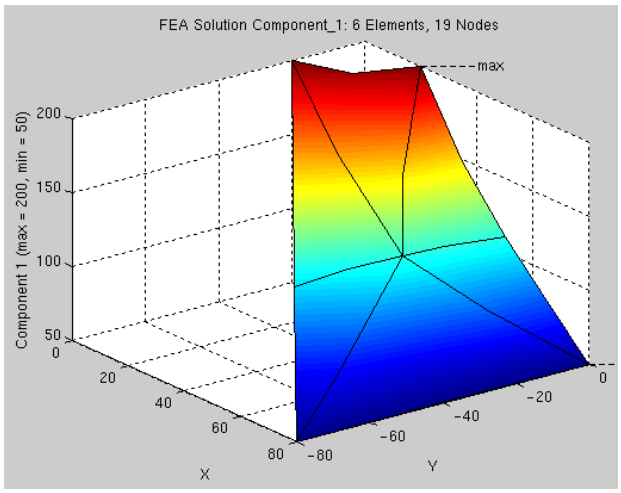
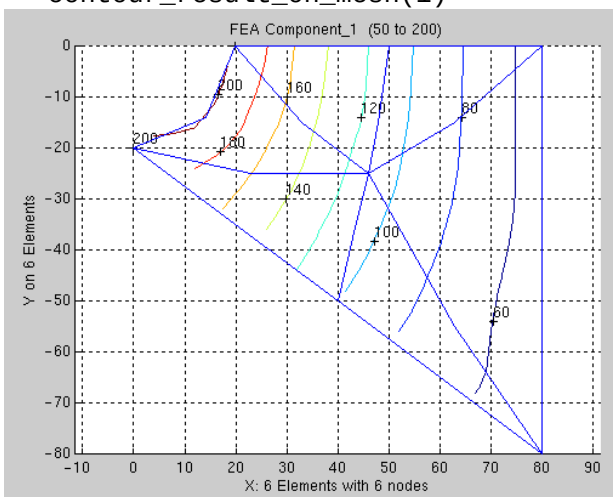
```
>> color_result_surface(1)
```

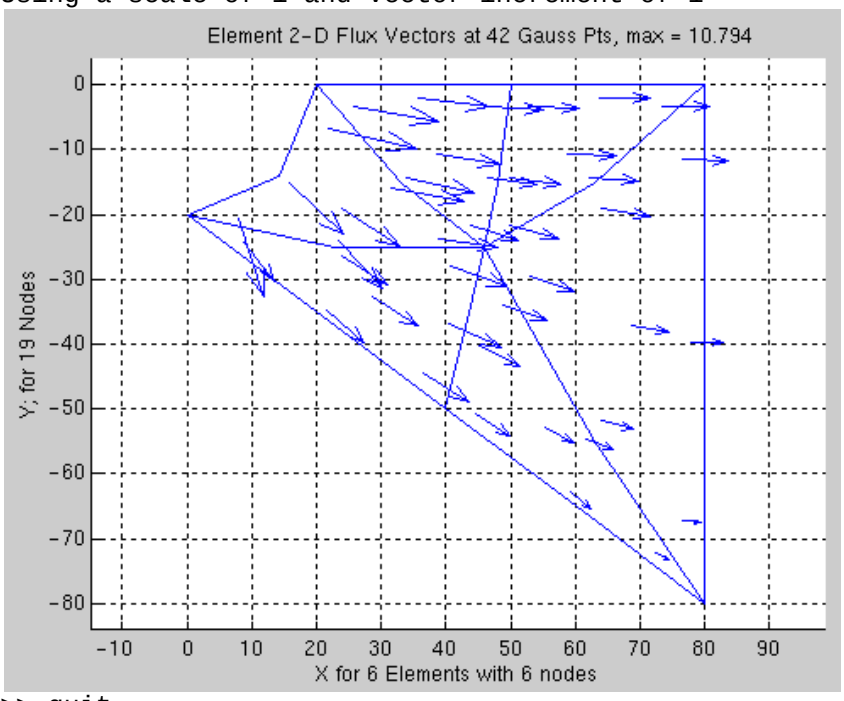





```
>> contour_result_on_mesh(1)
```




```
>> quiver_qp_flux_mesh(1,1,-1)
Using a scale of 1 and vector increment of 1
```




```
>> quit
```