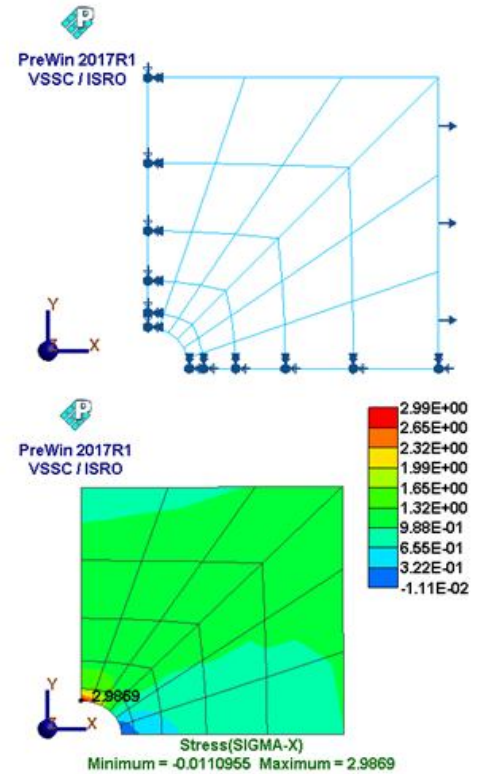
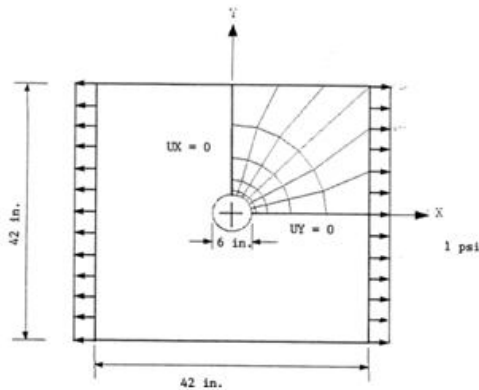


Static analysis of a large square plate with a circular hole under inplane loading



Material property	:	E=700psi , $\nu = 0.2$ 2D four node plane stress element, square plate of 42 in side length and 1 in thickness has a hole of 6 in diameter in its center. Uniform						
Element type	:	inplane pressure P= 1 psi along width, Symmetric boundary conditions ($U_x = 0.0$ at $X = 0.0$ and $U_y = 0.0$ at $Y = 0.0$)						
Finite element statistics	:	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">Number of nodes</td> <td style="text-align: center;">Number of elements</td> <td style="text-align: center;">Degrees of freedom</td> </tr> <tr> <td style="text-align: center;">42</td> <td style="text-align: center;">30</td> <td style="text-align: center;">192</td> </tr> </table>	Number of nodes	Number of elements	Degrees of freedom	42	30	192
Number of nodes	Number of elements	Degrees of freedom						
42	30	192						

Output parameters	Theoretical value	FEAST ^{SMT}	NISA2 [®]
Stress concentration factor(S_{XX}/P at $X = 0$, $Y = 3$)	3	2.9869	3.0006