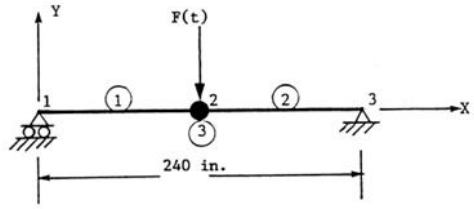
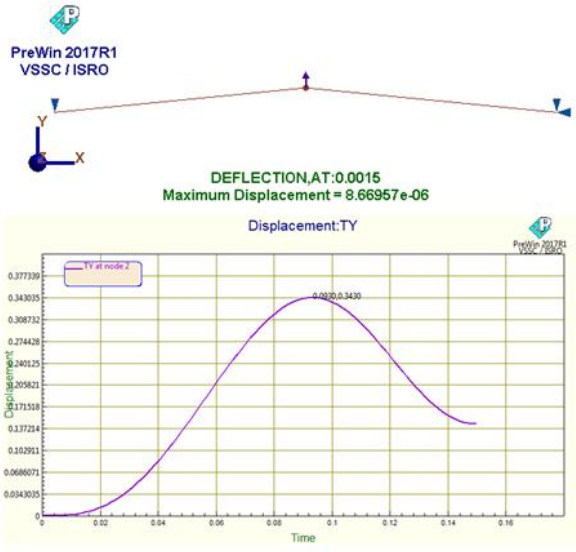
Transient response of a simply supported beam subjected to a constant force





Boundary Condition : $U_y = 0$ at node 1. U_x, $U_y = 0$. at node 3

Material Property : $E_x = 30 \times 10^4 psi$, $\nu = 0.3$

Element Type : 2-D beam element

Geometry : A =25.95 in^2, I_{ZZ} = 800.6 in^4, lumped mass, M =0.0259067 lb-sec^2/in

Load :

Time (Sec.)	0	0.075	1
Load	0	20	20

Finite Element Statistics :

Number of elements	Number of nodes	Degrees of freedom
3	3	15

Output parameters	Theoretical	FEAST^{SMT}	NISA2®
Frequency (rad/sec) Mode 1	9.03	8.96	9.03
Time of Maximum Response (sec)	0.09	0.09	0.09
Maximum Displacement (in)	0.33	0.34	0.34