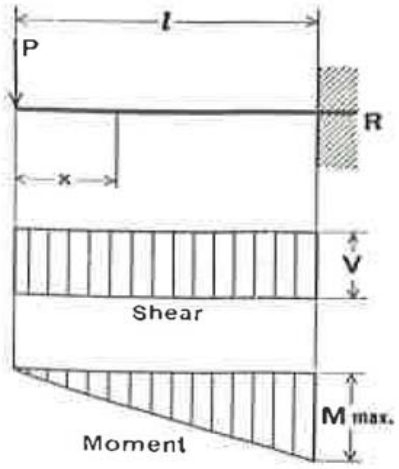
CANTILEVER BEAM - CONCENTRATED LOAD AT FREE END

SPAN PARAMETERS

Magnitude of load (P):	500	pounds
Length of Span (l):	5	feet
Point of interest (x):	2	feet



REACTIONS, SHEAR & MOMENT

Reaction (R):	500	pounds
V max:	500	pounds
Vx:	500	pounds
M max:	2500	foot pounds
Mx:	1000	foot pounds

BEAM SECTION & MATERIAL

Base of Rectangle:	1	inches
Height of Rectangle:	4	inches
Modulus of Elasticity (E):	3.00E+07	PSI

NOTE: This spreadsheet is valid only for rectangular beams.

Section Modulus (S):	2.67	inches^3			
Moment of Inertia (Ixx):	5.33	inches^4	Calculated	5	inches^4
Optional Ixx override:		inches^4			
Beam Cross-section Area:	4.00	inches^2			

BEAM STRESSES

Max Bending Stress:	11250	PSI
Bending Stress at x:	4500	PSI
Max Shear Stress:	187.5	PSI
Shear Stress at x:	187.5	

DEFLECTIONS

Max Deflection:	0.225	Inches
Deflection at x:	0.097	Inches

Shear Stress Distribution in Beam Cross-Section - SHEAR AT X

Height	a	ybar	Q	Tau b
100%	0	2	0	0.0
90%	0.4	1.8	0.72	67.5
80%	0.8	1.6	1.28	120.0
70%	1.2	1.4	1.68	157.5
60%	1.6	1.2	1.92	180.0
50%	2	1	2	187.5
40%				180.0
30%				157.5
20%				120.0
10%				67.5
0%				0.0

symmetry