

Shear Force Diagrams & Equations

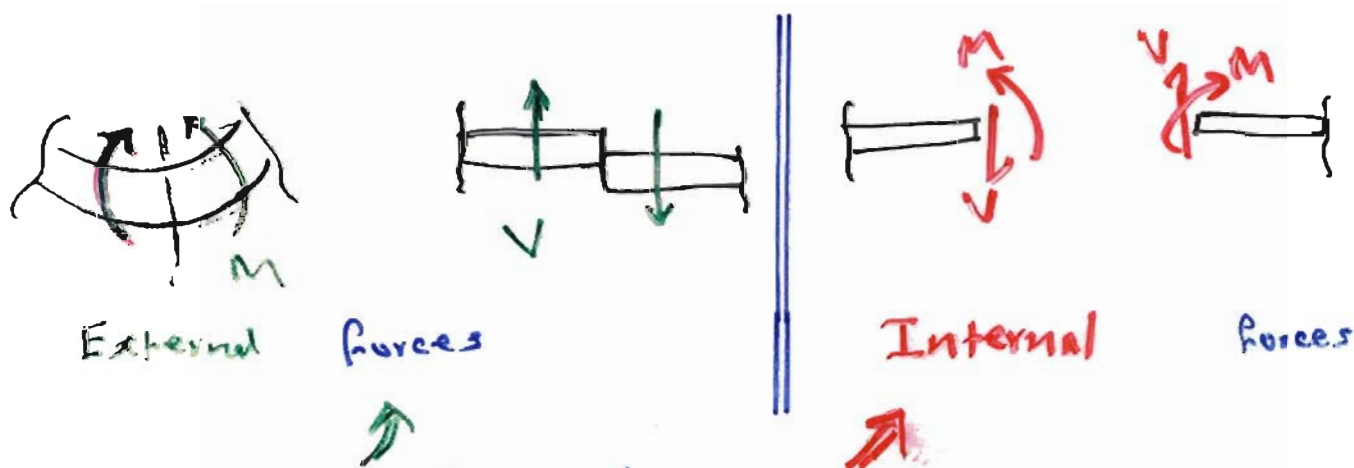
Bending Moment Diagrams & Equations



Beams

Beam = a structural member designed to support loads applied **perpendicular** to the axis of the beam.

It is usually **long** in one direction (axis of the beam) compared with the other two directions.



All shown external and internal forces are positive.

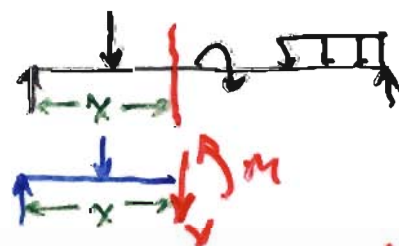
Before, we discussed how to determine the internal forces at specific points. Now we need to determine the internal forces at **any point x** ; that is we need to write V and M as functions of x . \Rightarrow

$$V = f(x)$$

$$M = f(x)$$

Then we plot these functions.

See the examples next



*Note that there are infinite number of points \Rightarrow use x .