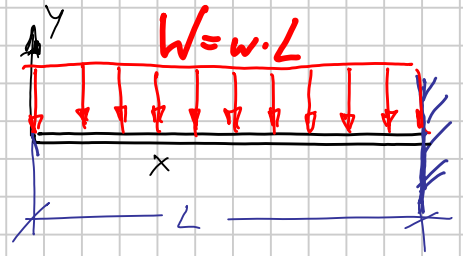


BEAM DEFLECTIONS

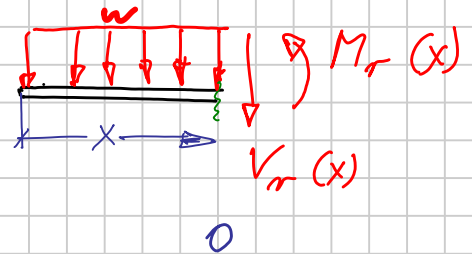
Note Title

1/16/2008

I. STATIC SYSTEM:



II. FREE BODY DIAGRAMME:



III. EQUILIBRIUM EQUATIONS:

$$\sum M_o = 0$$

$$\sum V_o = 0$$

IV. DEFLECTION & DERIVATIVES:

DEFLECTION: v

$$\theta : \text{SLOPE} : \frac{dv}{dx} = v'$$

$$M : \text{MOMENT} : EI \frac{d^2v}{dx^2} = EI v'' = \frac{d\theta}{dx} \cdot EI$$

$$V : \text{SHEAR} : EI \frac{d^3v}{dx^3} = EI v''' = \frac{dM}{dx}$$

$$q : \text{LOAD} : EI \frac{d^4v}{dx^4} = EI v^{iv} = \frac{dV}{dx}$$

V. BOUNDARY CONDITIONS

→ SOLUTION