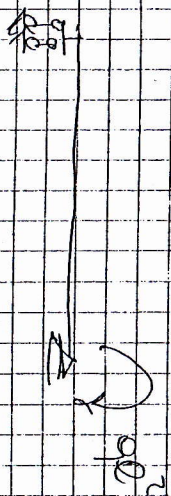


C1



$$\frac{d^4 v(z)}{dz^4} = \frac{q}{EI}$$

$$\frac{d^3 v(z)}{dz^3} = C_1 = -\frac{T_2}{EI}$$

$$T_2 = -C_1 EI$$

$$\frac{d^2 v(z)}{dz^2} = C_1 z + C_2 = -\frac{M(z)}{EI}$$

$$M_2 = -C_1 z EI - C_2 EI$$

$$\frac{dv(z)}{dz} = \frac{C_1 z^2}{2} + C_2 z + C_3 = -\phi(z)$$

$$\phi(z) = -\frac{C_1 z^2}{2} - C_2 z - C_3$$

$$v(z) = \frac{C_1 z^3}{6} + \frac{C_2 z^2}{2} + C_3 z + C_4$$

For $z=0$ $v=0$ C_4

For $z=0$ $\phi=0$ $C_3=0$

For $z=l$ $v=0$ $\frac{C_1 l^3}{6} + \frac{C_2 l^2}{2} = 0$ $C_2 = -\frac{C_1 l}{3}$

For $z=l$ $M=0$ $\phi(l) = -\frac{q l^2}{2}$

$$M_2 = -C_1 l EI = \frac{C_1 l EI}{3} = -\frac{q l^2}{2}$$

$$\frac{C_1 l EI}{3} = \frac{q l^2}{2}$$

$$C_1 = \frac{3 q l}{4 EI}$$