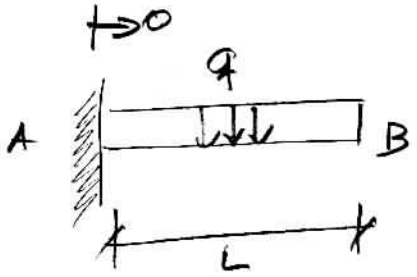
TE1-3.18



$M_A = -qL^2/2$

$V_A = qL$

$$M(x) = EI\left(-qL^2/2 + qLx - qx^2/2\right)$$

$$\theta(x) = \int \frac{M(x)}{EI}\,dx = \frac{1}{EI}\left(-qL^2/2\,x + qLx^2/2 - qx^3/6 + C_1\right)$$

como $\theta(x=0) = 0 \quad C_1 = 0$

$$v(x) = \int \theta(x)\,dx = \frac{1}{EI}\left(\frac{-qL^2}{4}x^2 + qLx^3/6 - qx^4/24 + C_2\right)$$

como $v(x=0) = 0 \quad C_2 = 0$

$$v(x) = \left(-\frac{qL^2}{4}x^2 + qLx^3/6 - qx^4/24\right) \times 1/EI$$

* P/ $x = L$

$$v(L) = \left(-qL^4/4 + qL^4/6 - qL^4/24\right) \times 1/EI = \frac{-qL^4}{8EI}$$