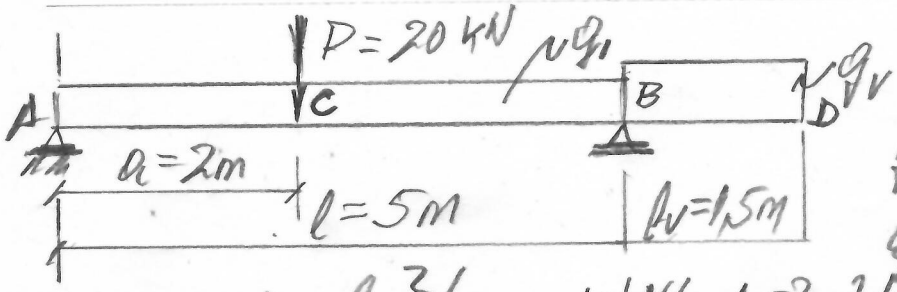
Sigamos con un ejemplo numérico



$q_1 = 8\ kN/m$

$q_v = 10\ kN/m$

$M_B = -q_v \cdot \ell_v^2/2 = -10 kN/m \cdot 1,5^2 m^2/2 = -11,25\ kNm$

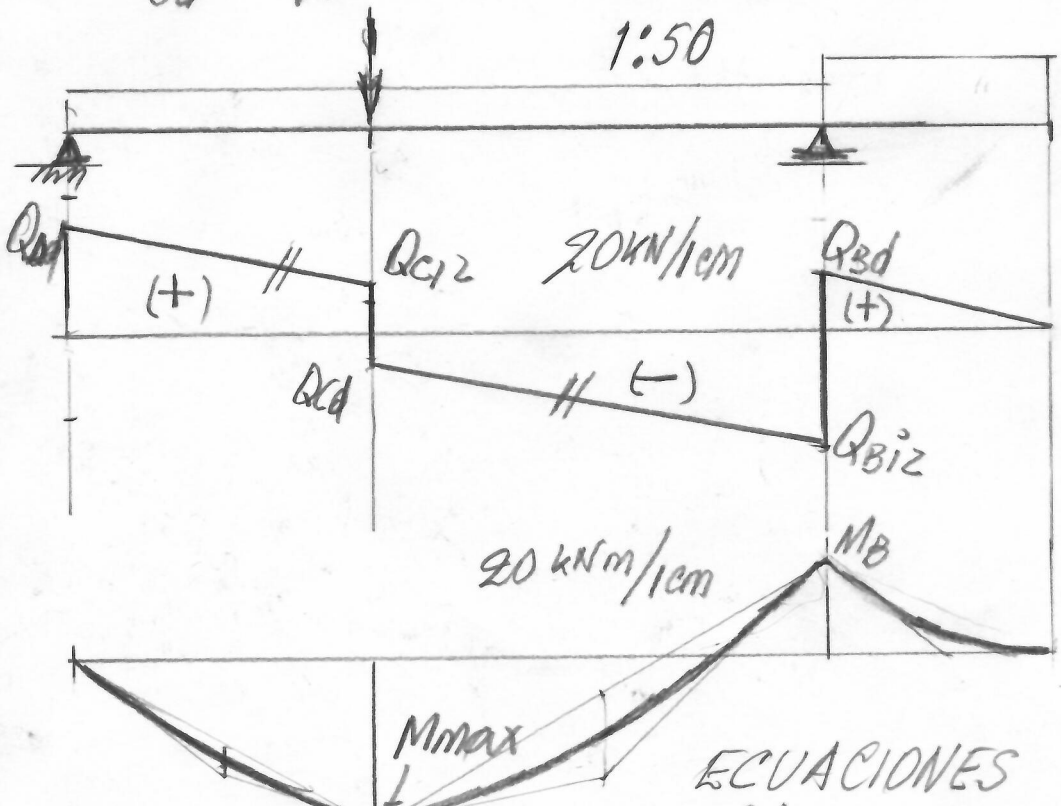
$R_A = q_1 \cdot \ell/2 + P(\ell-a)/\ell + M_B/\ell = 8kN/m \cdot 5m/2 + 20\ kN \cdot (5m-2m)/5m - 11,25\ kNm/5m = 29,75\ kN = Q_{Ad}$

$R_{Bi2} = q_1 \ell/2 + P \cdot a/\ell - M_B/\ell = 8kN/m \cdot 5m/2 + 20kN \cdot 2m/5m + 11,25\ kNm/5m = 30,25\ kN = -Q_{Bi2}$

$\Sigma y = 29,75kN + 30,25\ kN - 8\ kN/m \cdot 5m - 20kN = \emptyset$ (B.C)

$R_{Bd} = q_v \cdot \ell_v = 10kN/m \cdot 1,5m = 15\ kN = Q_{Bd}$

1:50



$Q_{Ci2} = 29,75 - 8 \cdot 2 = 13,75\ kN$

$Q_{Cd} = 13,75 - 20 = -6,25\ kN$

$M_{máx} = \frac{29,75 + 13,75}{2} \cdot 2 = 43,5\ kNm$

ECUACIONES

$Q_x^I = R_A - q_1 \cdot x$; $M_x^I = R_A \cdot x - q_1 x^2/2$

$Q_x^{II} = R_A - q_1 x - P$; $M_x^{II} = R_A \cdot x - q_1 x^2/2 - P(x-a)$

$Q_x^{III} = Q_{Bd} - q_v(x-\ell)$; $M_x^{III} = M_B + Q_{Bd}(x-\ell) - q_v(x-\ell)^2/2$

cero en "A"