ARQ. JOSE LISANDRO LOPEZ ALFARO

NOMBRE DEL TEMA: ESFUERZOS Y DEFORMACIONES

PARCIAL: IV

NOMBRE DE LA MATERIA: RESISTENCIA DE MATERIALES DE CONSTRUCCION

RESISTENCIA DE MATERIALES DE CONSTRUCCIO

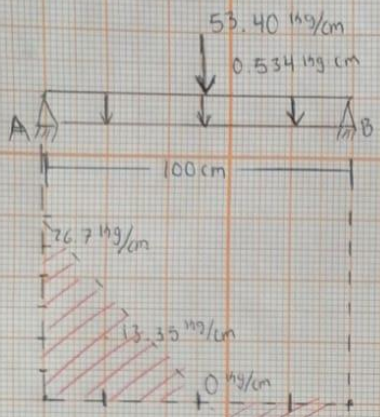
PARCIAL 4

ARQ. PEDRO ALBERTO GARCIA LOPEZ

NOMBRE DE LA LICENCIATURA: ARQUITECTURA

CUATRIMESTRE: IIII

JOSE LISANDRO LÓPEZ ALFARO



1.- $R_A = R_D = P/2 \quad \frac{53.40}{2} = 26.7$

2.- $\Sigma FY = 0 \quad 26.7 - [0.534\ kg/cm\ (x)] - V = 0$

$V = 26.7 - [0.534\ kg/cm\ (x)]$

3.- Ecuación de momentos.

$26.7 \cdot (x)\ [0.534\ kg/cm\ (x)\ (x/2)\ kg/cm = 0$

$M = -26.7 \cdot x - \frac{0.534\ kg/cm\ (x^2)}{2}$

$M = -26.7\ kg/cm \cdot (x) - 0.267\ x^2 + M = 0$

$M = 26.7\ kg/cm\ (x) - 0.267\ kg/cm\ (x^2)$

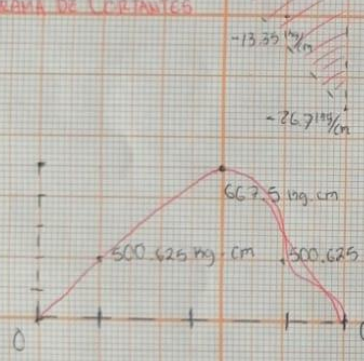
$V = 26.7\ kg/cm - [0.267\ kg\ cm\ (x)]$

$M = 26.7\ kg/cm\ (x) - 26.7\ kg/cm\ (x^2)$

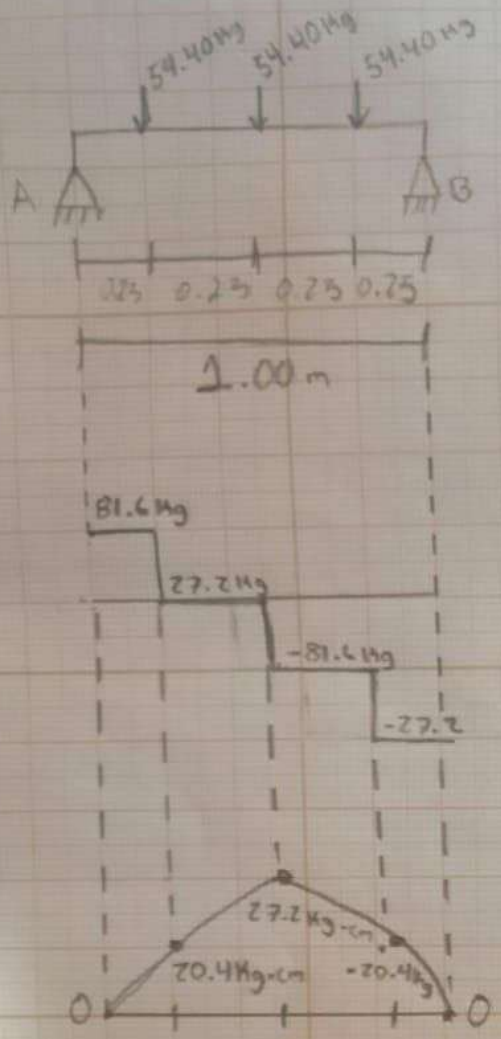
$V = 26.7\ kg/cm - [0.534\ kg/cm\ (0)] = 26.7\ kg$
$V = 26.7\ kg/cm - [0.534\ kg/cm\ (25)] = 13.35\ kg$
$V = 26.7\ kg/cm - [0.534\ kg/cm\ (50)] = 0\ kg$
$V = 26.7\ kg/cm - [0.534\ kg/cm\ (75)] = -13.35\ kg$
$V = 26.7\ kg/cm - [0.534\ kg/cm\ (100)] = -26.7\ kg$

$M = 26.7\ (0) - 0.267\ kg/cm\ (0^2) = 0\ kg\ cm$
$M = 26.7\ (25) - 0.267\ kg/cm\ (25^2) = 500.625\ kg\cdot cm$
$M = 26.7\ (50) - 0.267\ kg/cm\ (50^2) = 667.5\ kg\cdot cm$
$M = 26.7\ (75) - 0.267\ kg/cm\ (75^2) = 500.625\ kg\cdot cm$
$M = 26.7\ (100) - 0.267\ kg/cm\ (100^2) = 0\ kg\cdot cm$

• Diagrama de Cortantes



• Gráfica de Momentos



① REACCIONES

$R_A = R_B = 3F/2$

$3(54.40\ kg)/2 = 81.6\ kg$

$R_A - R_B = 81.6 - 54.40 = 27.2\ kg$

$0 + (0.25_{cm} \cdot 81.6\ kg) = 20.4\ kg \cdot cm$

$20.4\ kg + (0.25_{cm} \cdot 27.2\ kg) = 27.2\ kg \cdot cm$

$27.2\ kg + (0.25\ cm \cdot -27.2\ kg) = 20.4\ kg \cdot cm$

$20.4\ kg + (0.25_{cm} \cdot -81.6\ kg) = 0\ kg \cdot cm$

COMPROBACION =

$M = \frac{54.40\ kg \cdot 1\ m}{2} = 27.2\ kg$