



NOMBRE DEL ALUMNO: ZULIBETH VÁZQUEZ NORIEGA.
NOMBRE DEL PROFESOR: PEDRO ALBERTO GARCÍA
NOMBRE DEL TRABAJO: EQUILIBRIO DE UN CUERPO RÍGIDO
MATERIA: ESTÁTICA PARA LA ARQUITECTURA
GRADO: 3°.
GRUPO: "A".
ARQUITECTURA

$\sum F_x = 0 \rightarrow Ax + Bx = 0$
 $\sum F_y = 0 \rightarrow Ay + By - 1000 - 2000 = 0$
 $\sum M_A = 0 \rightarrow (1000 \cdot 2) + (2000 \cdot 4) - By \cdot 6 = 0$
 $3000 + 8000 - 6By = 0$
 $11000 = 6By$
 $By = \frac{11000}{6} = 1833.33 \text{ kg}$
 $By \cdot 6 = 11000 \text{ kg}$
 $By = 1833.33 \text{ kg}$

$\sum F_x = 0 \rightarrow Ax - 1000 - 2000 + 4000 = 0$
 $Ax + 1000 = 0$
 $Ax = -1000 \text{ kg}$

Comprobación
 $240 = 1000 - 500 + 140 = 0$

$\sum F_x = 0 \rightarrow Ax + Bx = 0$
 $\sum F_y = 0 \rightarrow Ay + By - (2.7 \cdot 3) - 2 = 0$
 $- 8.1 - 2 = 0$
 $- 10.2 = 0$
 $By = 10.2 \text{ Ton}$
 $Ax = -10.2 \text{ Ton}$

$\sum M_A = 0 \rightarrow (2.7 \cdot 3 \cdot 1.5) + (2 \cdot 3) - By \cdot 6 = 0$
 $12.15 + 6 - 6By = 0$
 $18.15 = 6By$
 $By = 3.025 \text{ Ton}$

$\sum F_x = 0 \rightarrow Ax - 2.7 \cdot 3 - 2 \text{ Ton} + 2.7 \text{ Ton} = 0$
 $Ax = 2 \text{ Ton} + 2.7 \text{ Ton} = 4.7 \text{ Ton}$
 $Ax = 2.5 \text{ Ton} = 0$
 $Ax = 2.5 \text{ Ton}$

Comprobación
 $2.9 \text{ Ton} - 2.7 \text{ Ton} - 2 \text{ Ton} + 2.7 \text{ Ton} = 0$

CARGA CONJUNTA TRIANGULAR-RECTANGULAR

$\sum F_x = 0 \rightarrow Ax + Bx = 0$
 $\sum F_y = 0 \rightarrow Ay + By - (1 \cdot 3) - (1 \cdot 3) = 0$
 $2 = 0$
 $By = 2 \text{ Ton}$
 $Ax = -2 \text{ Ton}$

$\sum M_A = 0 \rightarrow (1 \cdot 3 \cdot 1.5) + (1 \cdot 3 \cdot 4.5) - By \cdot 6 = 0$
 $4.5 + 13.5 - 6By = 0$
 $18 = 6By$
 $By = 3 \text{ Ton}$

$\sum F_x = 0 \rightarrow Ax - 1.5 \text{ Ton} - 3 \text{ Ton} + 3 \text{ Ton} = 0$
 $Ax = 1.5 \text{ Ton}$

Comprobación
 $3 \text{ Ton} - 1.5 \text{ Ton} + 3 \text{ Ton} - 3 \text{ Ton} = 0$

$\sum F_x = 0 \rightarrow Ax + Bx = 0$
 $\sum F_y = 0 \rightarrow Ay + By - (80 \cdot 3) - 100 = 0$
 $240 + 100 = 0$
 $340 = 0$
 $By = 340 \text{ kg}$

$\sum M_A = 0 \rightarrow (80 \cdot 3 \cdot 1.5) + (100 \cdot 3) - By \cdot 6 = 0$
 $360 + 300 - 6By = 0$
 $660 = 6By$
 $By = 110 \text{ kg}$

$\sum F_x = 0 \rightarrow Ax - 80 \cdot 3 - 100 + 100 + 110 = 0$
 $Ax = 110 \text{ kg}$

Comprobación
 $100 - 100 + 110 - 110 = 0$