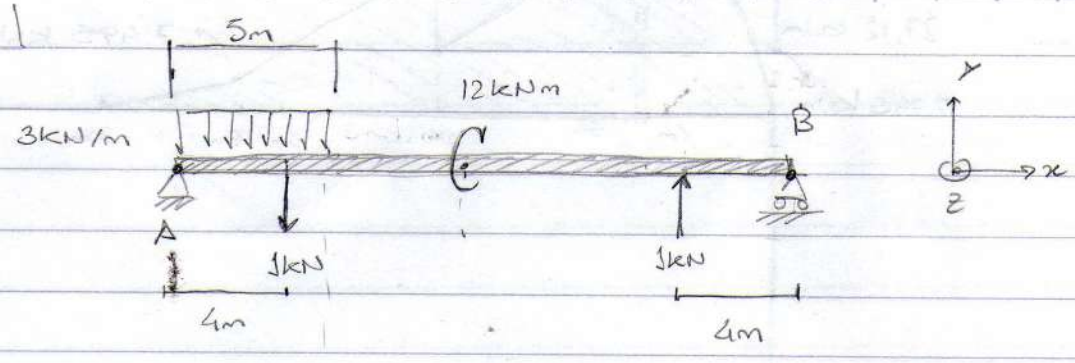
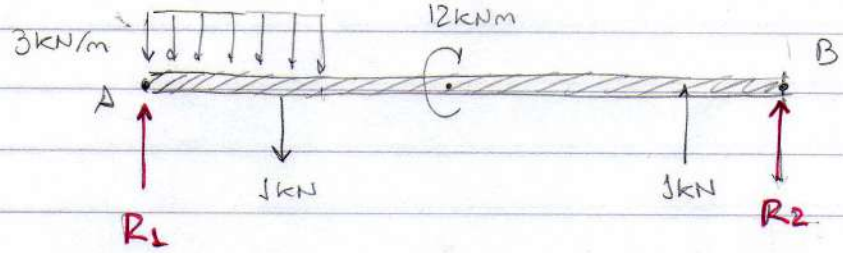
2° P 2021

Problema 1



⇒ DCL AB



$\Rightarrow \quad \Sigma F_y = 0 \quad \Leftrightarrow \quad R_1 + 1kN + R_2 = 1kN + 3\frac{kN}{m} \times 5m$

$\Leftrightarrow \quad \boxed{R_1 + R_2 = 15\,kN} \quad (1)$

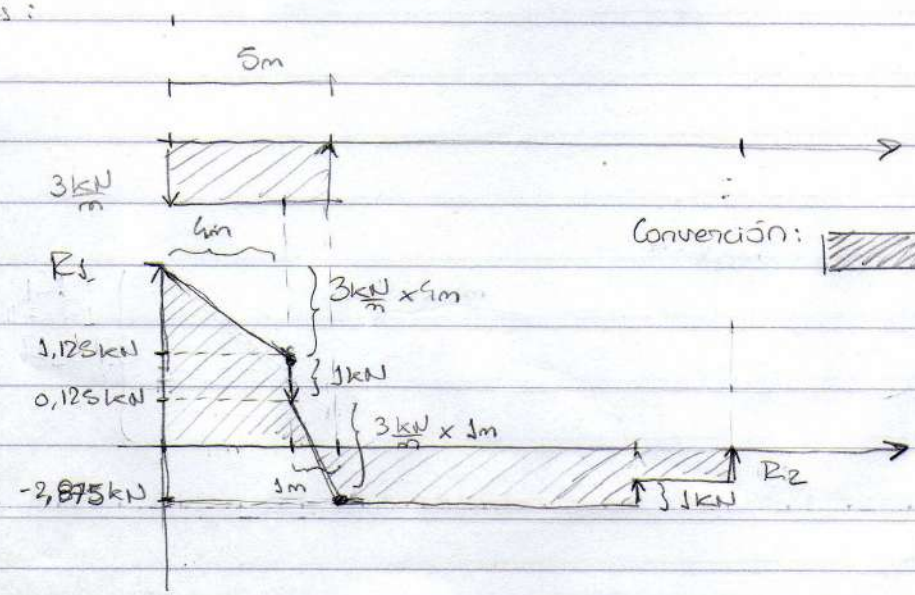
$\Rightarrow \quad \Sigma M_A = 0 \quad \Leftrightarrow \quad 3\frac{kN}{m} \times 5m \times 2{,}5m + 1kN \times 4m + 12\,kNm = 1kN \times 16m + R_2 \times 20m$

$\Leftrightarrow \quad 37{,}5\,kNm + 4\,kNm + 12\,kNm = 16\,kNm + 20m \times R_2$

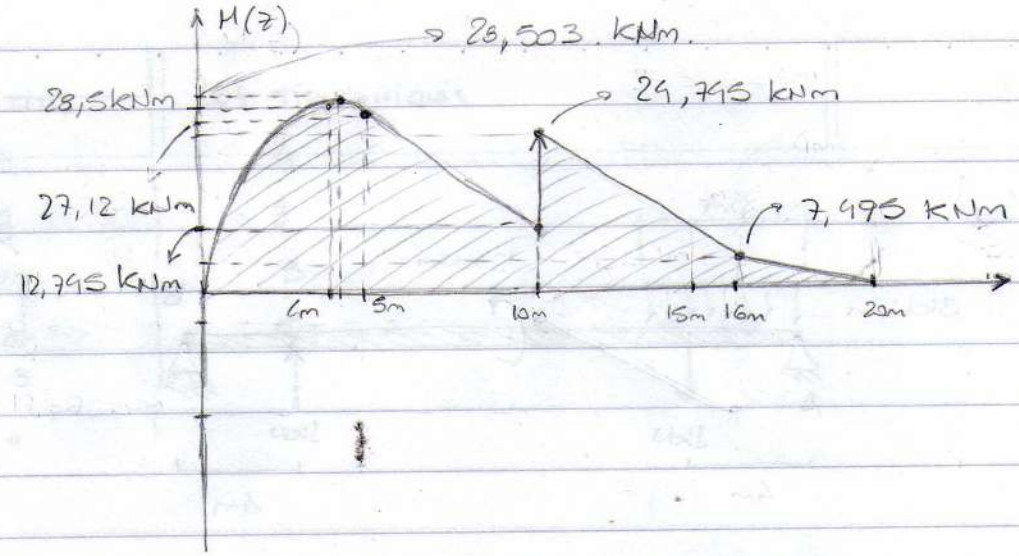
$37{,}5\,kNm = 20m \times R_2 \Rightarrow \boxed{R_2 = 1{,}875\,kN} \quad (2)$

$\Rightarrow \quad (1) \times (2) \Rightarrow \boxed{R_1 = 13{,}125\,kN}$

Diagramas:



M :


M(z)
28,503 kNm
28,5kNm
29,745 kNm
27,12 kNm
7,495 kNm
12,745 kNm
6m
5m
10m
15m
16m
20m