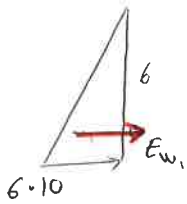


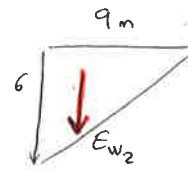


$$E_w = E_{w_1} + E_{w_2}$$



$$E_{w_1} = \frac{1}{2} 6^2 \cdot 10 = 180 \text{ KN/m}$$

$$\text{Brazo} = 8,1 + 12 - \frac{1}{3} 6 = 18,1 \text{ m}$$



$$E_{w_2} = \frac{1}{2} 9 \cdot 6 \cdot 10 = 270 \text{ KN/m}$$

$$\text{Brazo} = 6 - \frac{1}{3} 9 = 3 \text{ m}$$

Estos empujes crean momentos de signo contrario al resto  $\rightarrow$   $\leftarrow$

- El Rozamiento:

$$R = C_u \cdot L \cdot R$$

$$L = \pi \cdot R \times \frac{67,4}{180} = 24,7 \text{ m}$$

$$R = 47 \cdot 24,7 \cdot 21 = 24.378,9 \text{ KN/m}$$

$$\text{Brazo} = 21 \text{ m}$$

$$\boxed{FS} = \frac{24.378,9}{122,51 \cdot 11,4 + 1975,81 \cdot 7,6 - 180 \cdot 18,1 - 270 \cdot 3} = \boxed{1,975}$$

# Cartagena99

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