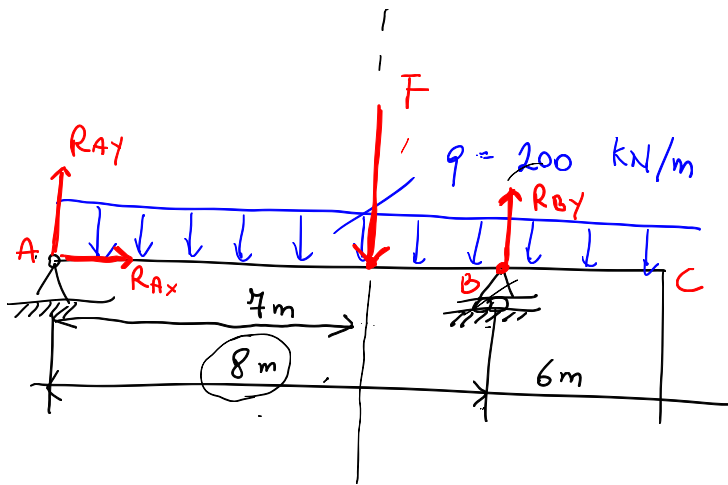


5. a

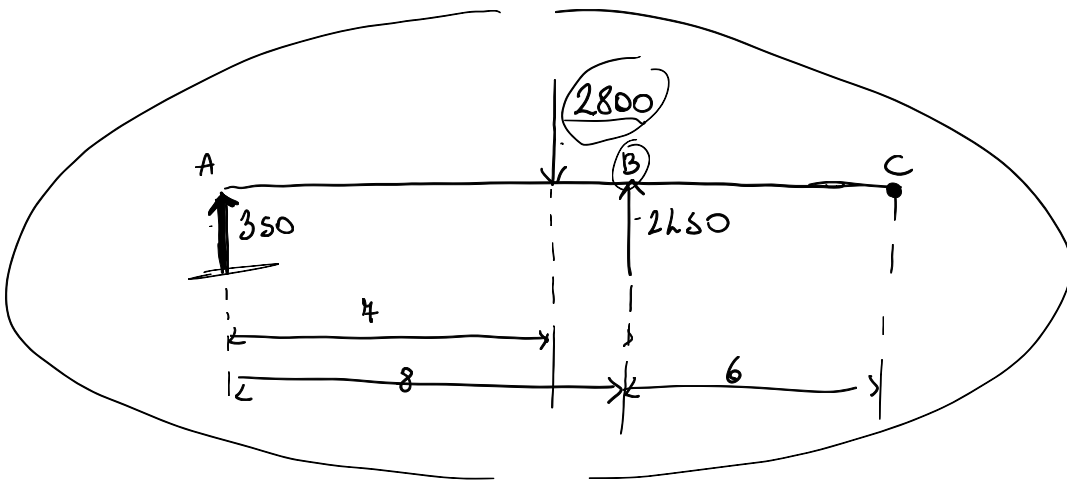


$$\begin{aligned}
 F &= q \cdot l = \\
 &= 200 \frac{\text{kN}}{\text{m}} \cdot 14 \text{ m} = \\
 &= \underline{\underline{2800 \text{ kN}}}
 \end{aligned}$$

$$\left. \begin{aligned}
 \sum F_x &= \phi \\
 \sum F_y &= \phi \\
 \sum M &= \phi
 \end{aligned} \right\} \Rightarrow \begin{cases} R_{Ax} = \phi \\ R_{Ay} + R_{By} - \bar{F} = \phi \\ -\bar{F} \cdot 7 \text{ m} + R_{By} \cdot 8 \text{ m} = \phi \end{cases}$$

$$R_{By} = \frac{F \cdot 7 \text{ m}}{8 \text{ m}} = 2800 \text{ kN} \cdot 0.875 = \underline{\underline{2450 \text{ kN}}}$$

$$R_{Ay} = \bar{F} - R_{By} = 2800 \text{ kN} - 2450 \text{ kN} = 350 \text{ kN}$$



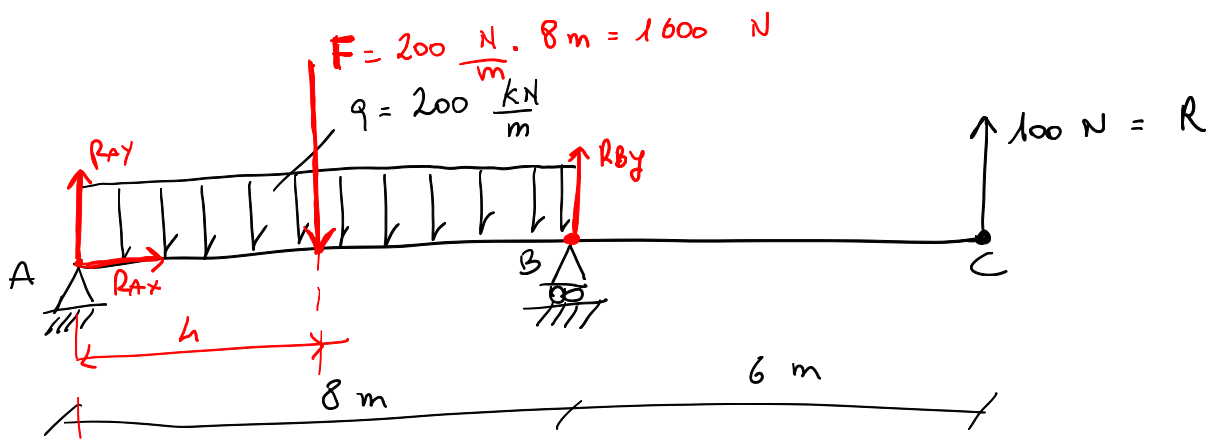
$$+ \uparrow \quad 350 - 2800 + 2450 = \phi$$

$$B \curvearrowright + \quad -350 \cdot 8 \text{ m} + 2800 \cdot 1 \text{ m} = \phi$$

$$A \curvearrowright + \quad -2800 \cdot 7 + 2450 \cdot 8 = \phi$$

$$C \curvearrowright + \quad -350 \cdot 14 - 2450 \cdot 6 + 2800 \cdot 7 = \phi$$

S. b



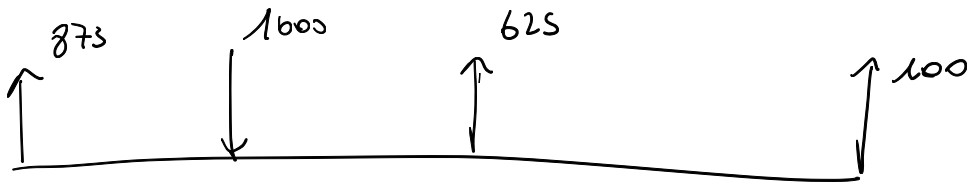
$R_{Ax} = 0$

$\uparrow + R_{Ay} - F + R_{By} + R = 0$

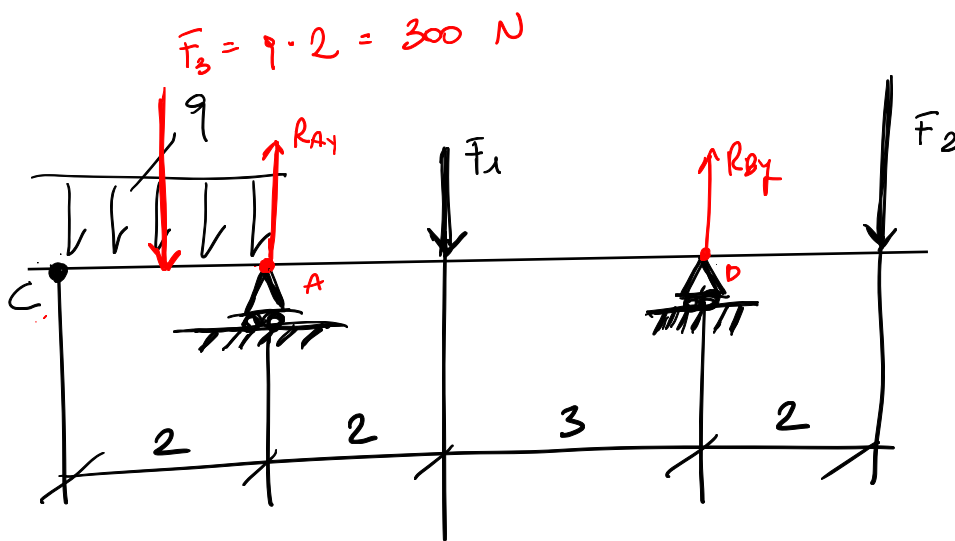
$\curvearrowright + - \bar{f} \cdot 4m + R_{By} \cdot 8m + R \cdot 14m = 0$

$R_{By} = \frac{F \cdot 4m - R \cdot 14m}{8m} = \frac{1600 \cdot 4 - 100 \cdot 14}{8} = 625 \text{ N}$

$R_{Ay} = F - R - R_{By} = 1600 \text{ N} - 100 \text{ N} - 625 \text{ N} = 875 \text{ N}$



S. c

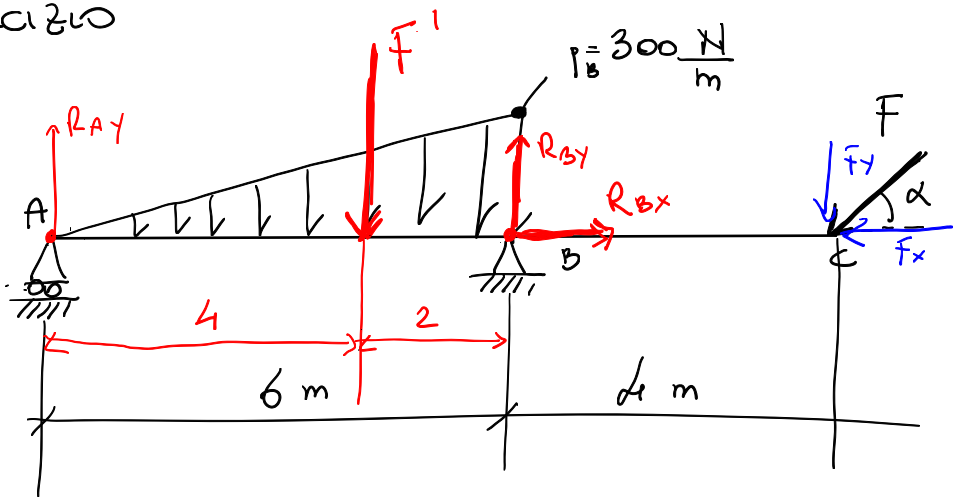


$q = 150 \frac{\text{N}}{\text{m}}$
 $F_1 = 200 \text{ N}$
 $F_2 = 300 \text{ N}$

$\uparrow + -300 \text{ N} + R_{Ay} - 200 \text{ N} + R_{By} - 300 \text{ N} = 0$

$\curvearrowright + F_3 \cdot 2 - F_1 \cdot 2 + R_{By} \cdot 5 - F_2 \cdot 7 = 0$

ESERCIZIO



$$F = 200 \text{ N}$$

$$\alpha = 30^\circ$$

$$q_B = 300 \frac{\text{N}}{\text{m}}$$

$$F_x = F \cos \alpha = 173 \text{ N}$$

$$F_y = F \sin \alpha = 100 \text{ N}$$

$$\left\{ \begin{array}{l} \rightarrow R_{Bx} - F_x = 0 \\ \uparrow R_{Ay} - F' + R_{By} - F_y = 0 \\ \curvearrowright^A - F' \cdot 4\text{m} + R_{By} \cdot 6\text{m} - F_y \cdot 10\text{m} = 0 \end{array} \right. \Rightarrow$$

$$F' = 300 \frac{\text{N}}{\text{m}} \cdot \frac{6\text{m}}{2} = 900 \text{ N}$$

$$\left\{ \begin{array}{l} R_{Bx} = F_x \\ R_{Ay} = F' + F_y - R_{By} \\ R_{By} = \frac{F' \cdot 4\text{m} + F_y \cdot 10\text{m}}{6\text{m}} \end{array} \right. \Rightarrow$$

$$\left\{ \begin{array}{l} R_{Bx} = 173 \text{ N} \\ R_{Ay} = 900 + 100 - 766.7 \\ R_{By} = \frac{900 \cdot 2 + 100 \cdot 5}{3} = 766.7 \text{ N} \end{array} \right.$$

$$\Rightarrow \left\{ \begin{array}{l} R_{Bx} = 173 \text{ N} \\ R_{Ay} = 233.2 \text{ N} \\ R_{By} = 766.7 \text{ N} \end{array} \right.$$

