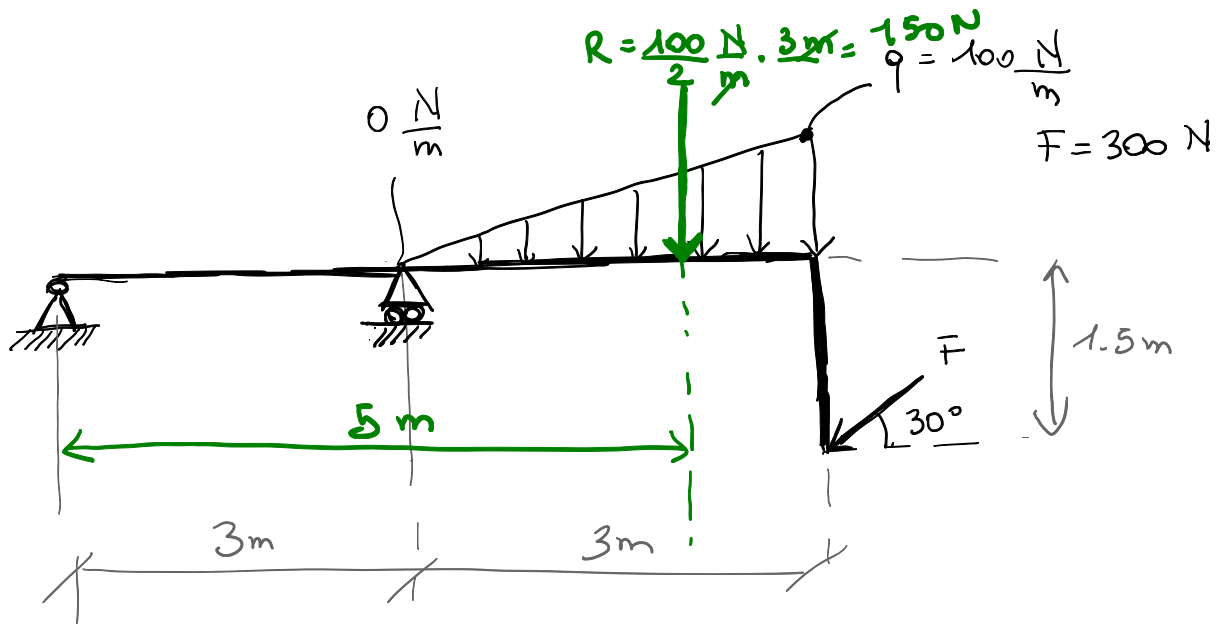
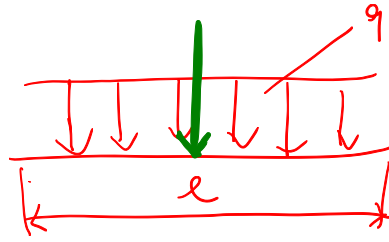


ESERCIZIO

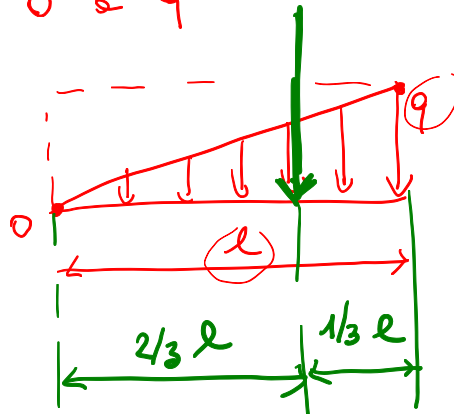


CARICO DISTRIBUITO COSTANTE q

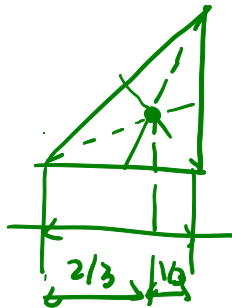


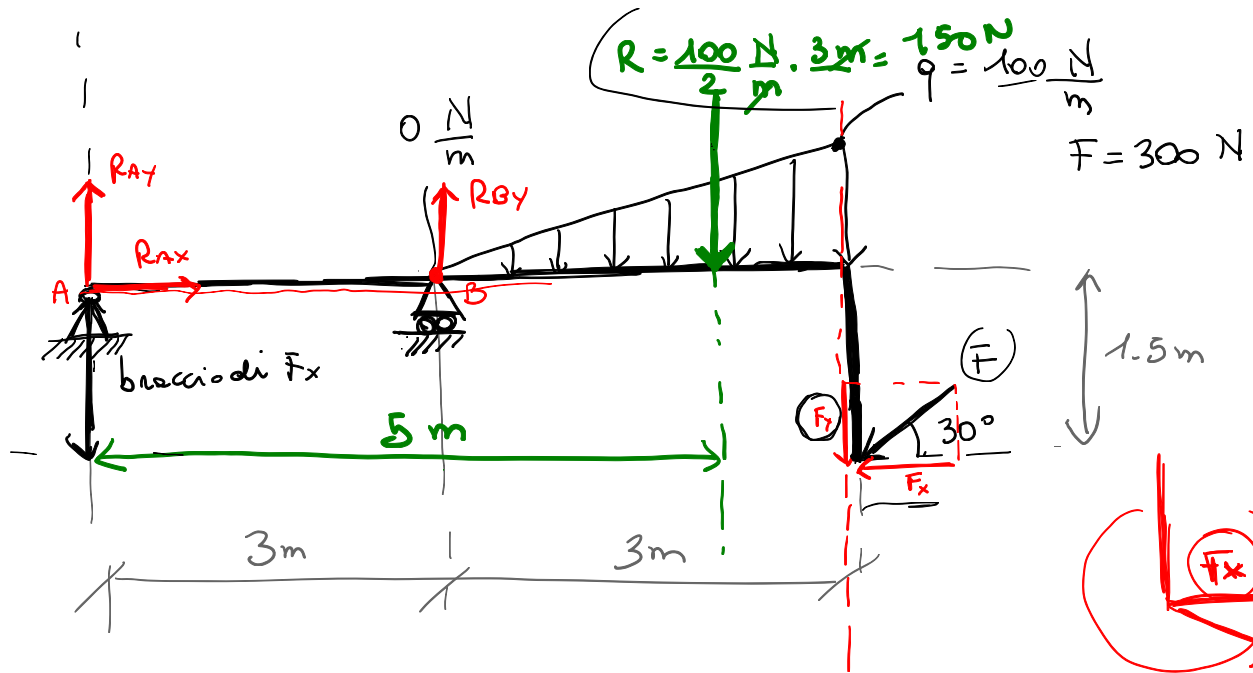
$R = q \cdot l$ ed \bar{x} applicata nel centro della distribuzione

CARICO DISTRIBUITO LINEARE da 0 a q



$R = \frac{q \cdot l}{2}$ e applicata nel centro della distribuzione





$$\left. \begin{aligned} \sum F_x &= 0 \\ \sum F_y &= 0 \\ \sum M &= 0 \end{aligned} \right\} \Rightarrow \text{ricavo le reazioni incognite}$$

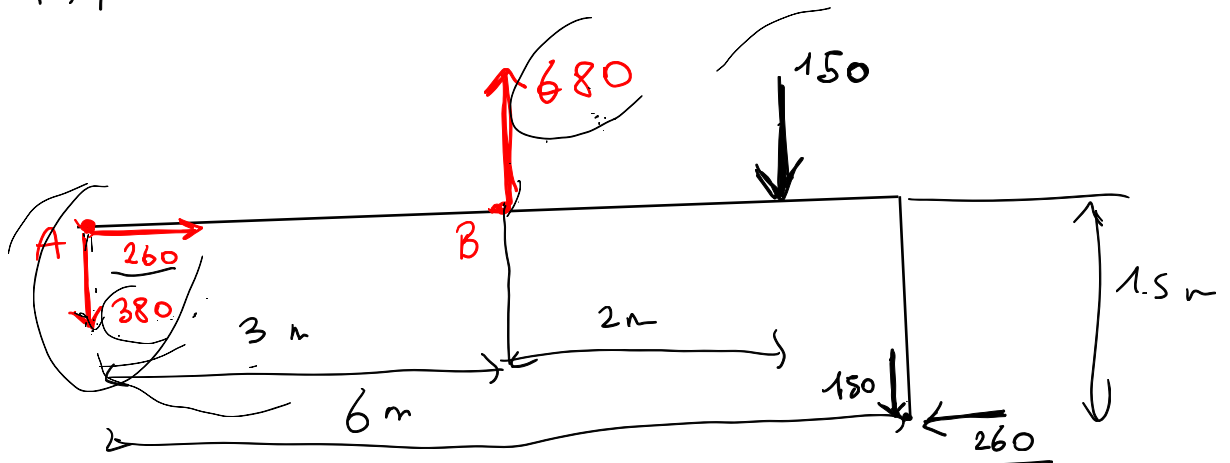
$$\begin{aligned} F_x &= F \cdot \cos 30^\circ = 300 \text{ N} \cdot \frac{\sqrt{3}}{2} = 260 \text{ N} \\ F_y &= F \cdot \sin 30^\circ = 300 \text{ N} \cdot \frac{1}{2} = 150 \text{ N} \\ R &= 150 \text{ N} \end{aligned}$$

$$\left. \begin{aligned} + \rightarrow x \\ + \uparrow y \\ + \curvearrowright A \end{aligned} \right\} \begin{cases} R_{Ax} - F_x = 0 \\ R_{Ay} + R_{By} - F_y - R = 0 \\ + R_{By} \cdot 3 \text{ m} - R \cdot 5 \text{ m} - F_y \cdot 6 \text{ m} - F_x \cdot 1.5 = 0 \end{cases}$$

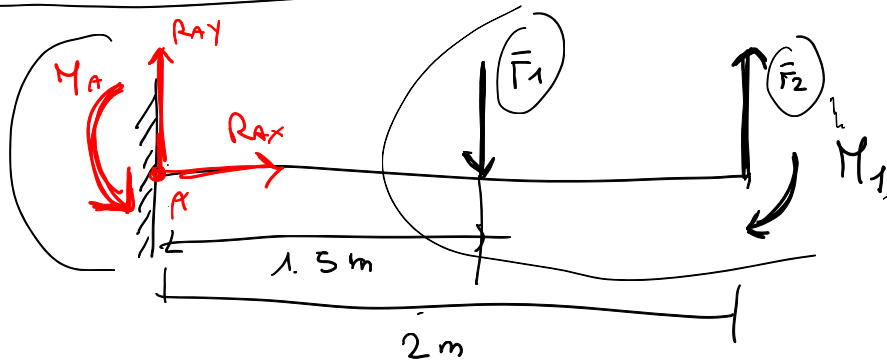
$$\left\{ \begin{aligned} R_{Ax} &= F_x \\ R_{By} &= \frac{R \cdot 5 \text{ m} + F_y \cdot 6 \text{ m} + F_x \cdot 1.5 \text{ m}}{3 \text{ m}} \Rightarrow \\ R_{Ay} &= F_y + R - R_{By} \end{aligned} \right.$$

$$\Rightarrow \left\{ \begin{aligned} R_{Ax} &= 260 \text{ N} \\ R_{By} &= \frac{150 \cdot 5 + 150 \cdot 6 + 260 \cdot 1.5}{3} \text{ N} = \frac{2010}{3} \text{ N} = 680 \text{ N} \Rightarrow \\ R_{Ay} &= 150 \text{ N} + 150 \text{ N} - 680 \text{ N} = -380 \text{ N} \end{aligned} \right.$$

$$\Rightarrow \begin{cases} R_{Ax} = 260 \text{ N} \\ R_{By} = 680 \text{ N} \\ R_{Ay} = -380 \text{ N} \end{cases}$$



$$\begin{cases} \sum \bar{F}_x = 0 & \xrightarrow{+} 260 - 260 = 0 \\ \sum \bar{F}_y = 0 & \Rightarrow \uparrow -380 + 680 - 150 - 150 = 0 \\ \sum M = 0 & \overset{A}{\curvearrowleft} + 680 \cdot 3 - 150 \cdot 5 - 260 \cdot 1.5 - 150 \cdot 6 = 0 \end{cases}$$



$$\begin{aligned} F_1 &= 300 \text{ N} \\ F_2 &= 200 \text{ N} \\ M_1 &= 300 \text{ N} \cdot \text{m} \end{aligned}$$

$$\begin{cases} \xrightarrow{+} R_{Ax} = 0 \\ \uparrow + R_{Ay} - F_1 + F_2 = 0 \\ \overset{A}{\curvearrowleft} M M_A - M_1 - F_1 \cdot 1.5 \text{ m} + F_2 \cdot 2 \text{ m} = 0 \end{cases}$$

$$\Rightarrow \begin{cases} R_{Ax} = 0 \\ R_{Ay} = F_1 - F_2 \\ M_A = M_1 + F_1 \cdot 1.5 - F_2 \cdot 2 \text{ m} \end{cases} \Rightarrow \begin{cases} R_{Ax} = 0 \\ R_{Ay} = 100 \text{ N} \\ M_A = 300 \text{ N} \cdot \text{m} + 300 \cdot 1.5 \text{ m} - 200 \cdot 2 \text{ m} = 300 \text{ N} \cdot \text{m} + 450 \text{ N} \cdot \text{m} - 400 \text{ N} \cdot \text{m} = 350 \text{ N} \cdot \text{m} \end{cases}$$