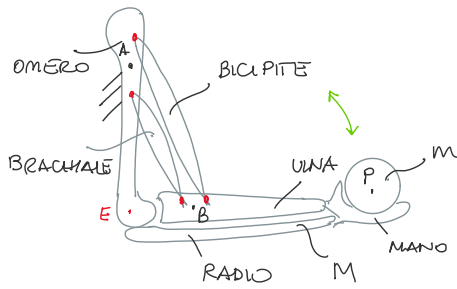


Esercizio Statica : curl

venerdì 11 ottobre 2024 12:55



$\downarrow g$

Nota : m, M (avambraccio)

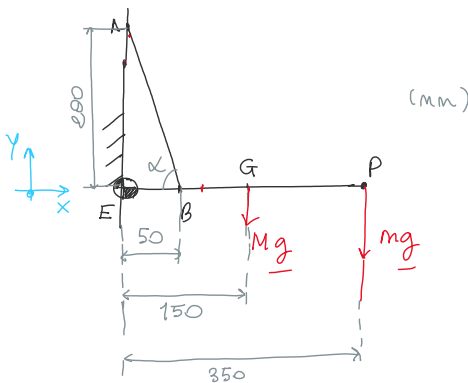
$$m = 10 \text{ Kg}$$

$$M = 1,5 \text{ Kg}$$

Valutare :
 1) Forza sviluppata dal gruppo brachiale

2) Reazione articolare al gomito

\downarrow CORPI RIGIDI + VINCOLI + AZIONE ESTERNE



$$\alpha \approx 76^\circ$$

Hip: CORPO RIGIDO = AVAMBRACCIO

OMERO TELAI

PROBLEMA PIANO $\Rightarrow x, y \rightarrow$ PIANO SAGGITALE

GOMITO \Rightarrow CERNIERA :
 ASSE Z

GRUPPO BRACHIALE \Rightarrow FUNE TESA

\downarrow
 SEQUIVA.
 RETTA // AB
 DI AZIONE

ANALISI VINCOLI

$$\oplus E \Rightarrow -2 \text{ gdl} \Rightarrow \begin{matrix} \nearrow R_E \\ \oplus E \end{matrix}$$

$$\begin{matrix} R_{Ey} \\ \oplus E \\ R_{Ex} \end{matrix} \quad (E, R_E) \quad \text{direz. non note}$$

$$\searrow B \Rightarrow 0 \text{ gdl} \Rightarrow \begin{matrix} \nearrow T \\ \searrow B \end{matrix}$$

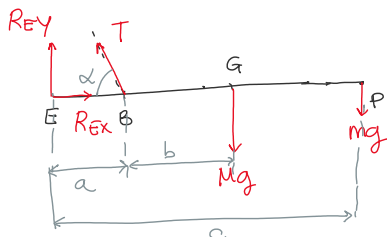
$$\Rightarrow (B, T) \quad T \text{ e' direz. note } // \overrightarrow{BA}$$

AVAMB. $\Rightarrow +1 \text{ gdl}$
 \downarrow
 FLESSIONE AVAMBRACCIO

$$\begin{matrix} \downarrow \\ (R_{Ex}, R_{Ey}, T) \end{matrix} \quad \text{3 INCOG.} \quad \left\{ \begin{array}{l} \text{Ep. TRASL. } \begin{matrix} x \\ y \end{matrix} \\ \text{Ep. ROT. } \end{array} \right. \quad 3 \text{ Ep.}^u$$

PROBLEMA ISOSTATICO

DCL PRELIMINARE



$$\left\{ \begin{array}{l} \underline{R}_{(ext)} = 0 \\ \underline{M}_{(ext)} = 0 \end{array} \right.$$

$$\rightarrow \left\{ \begin{array}{l} \underline{R}_E + \underline{T} + \underline{M}_G + \underline{m}_G = 0 \\ \underline{B} \uparrow \left[\underline{B}E \wedge \underline{R}_E + \underline{B}G \wedge \underline{M}_G + \underline{B}P \wedge \underline{m}_G = 0 \right] \end{array} \right.$$

$$\begin{matrix} x: \underline{i} \\ y: \underline{j} \\ B \uparrow \end{matrix} \left\{ \begin{array}{l} R_{Ex} - T \cos \alpha = 0 \\ R_{Ey} + T \sin \alpha - M_G - m_G = 0 \\ -R_{Ey} a - M_G b - m_G (c-a) = 0 \end{array} \right.$$

DCL
il verso di
 R_{Ey} va
corretto!!

$$\left\{ \begin{aligned} R_{Ey} &= -g \frac{(M_b + m(c-a))}{a} = -618,03 \text{ N} \\ T &= \frac{-R_{Ey} + Mg + mg}{\sin \alpha} = 753,22 \text{ N} \\ R_{Ex} &= T \cos \alpha = \frac{-R_{Ey} + Mg + mg}{\tan \alpha} = 182,22 \text{ N} \\ R_E &= \sqrt{R_{Ex}^2 + R_{Ey}^2} = 644,33 \text{ N} \end{aligned} \right.$$

DCL DEF.

