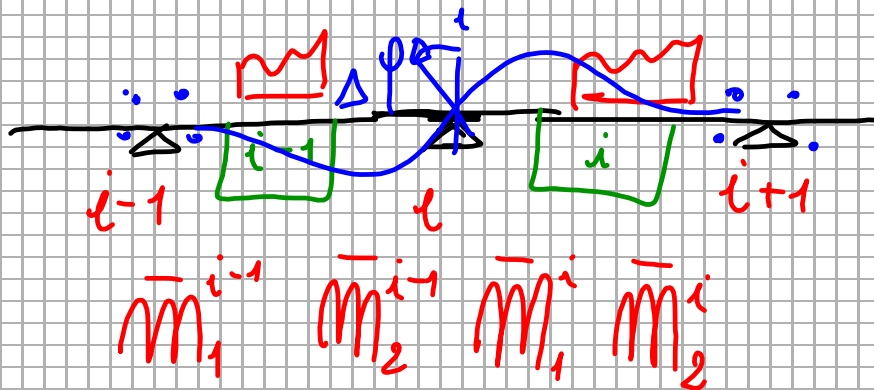


METODO DI CROSS



$$\Delta M_i = \bar{M}_2^{i-1} + \bar{M}_1^i$$

Squilibrio del nodo

ESTREMO VICINO

$$\Delta M_2^{i-1} = -\Delta \bar{M}_i$$

$$\frac{\rho_2^{i-1}}{\rho_2^{i-1} + \rho_1^i}$$

Coefficiente di ripartizione

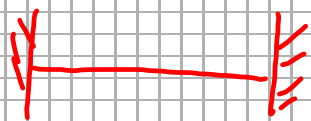
$$\Delta M_1^i = -\Delta \bar{M}_i$$

$$\frac{\rho_1^i}{\rho_2^{i-1} + \rho_1^i}$$

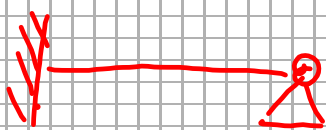
ESTREMO LONTANO

$$\Delta M_1^{i-1} = L_{12}^{i-1} \Delta M_2^{i-1}$$

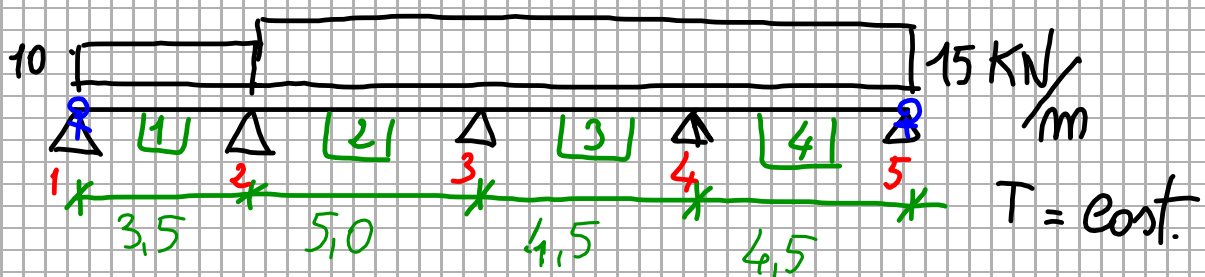
$$\Delta M_2^i = L_{12}^i \Delta M_1^i$$



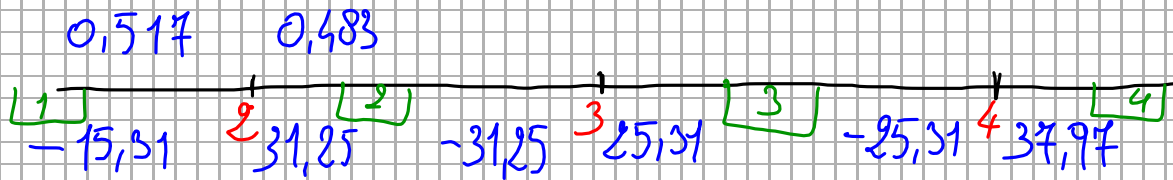
$$L_{12} = 0,5$$



$$L_{12} = 0$$

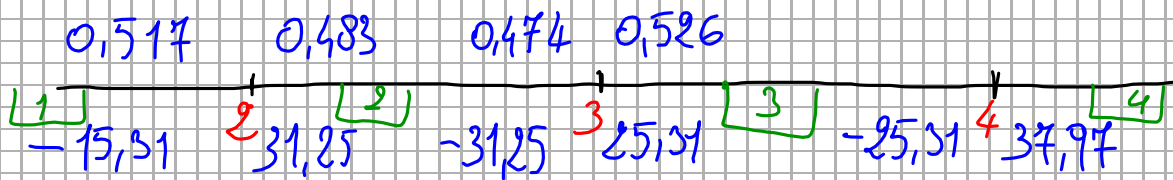


	1	2	3	4
P_1	0	$0,8EI$	$0,889EI$	$0,667EI$
P_2	$0,857EI$	$0,8EI$	$0,889EI$	0
P_{12}	0	$0,4EI$	$0,445EI$	0
\bar{M}_1	0	31,25	25,31	37,97
\bar{M}_2	-15,31	-31,25	-25,31	0



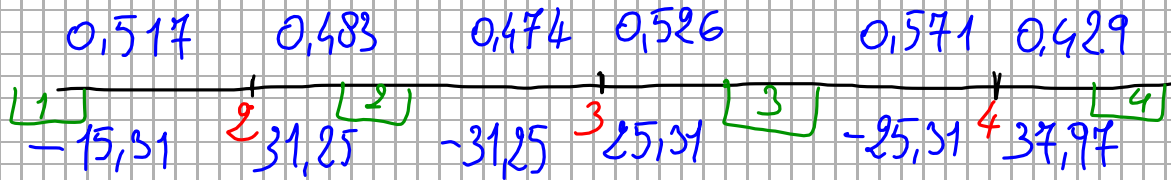
$$\frac{p_2^1}{p_2^1 + p_1^2} = \frac{0,857}{0,857 + 0,8} = 0,517$$

$$\frac{p_1^2}{p_2^1 + p_1^2} = \frac{0,8}{0,857 + 0,8} = 0,483$$



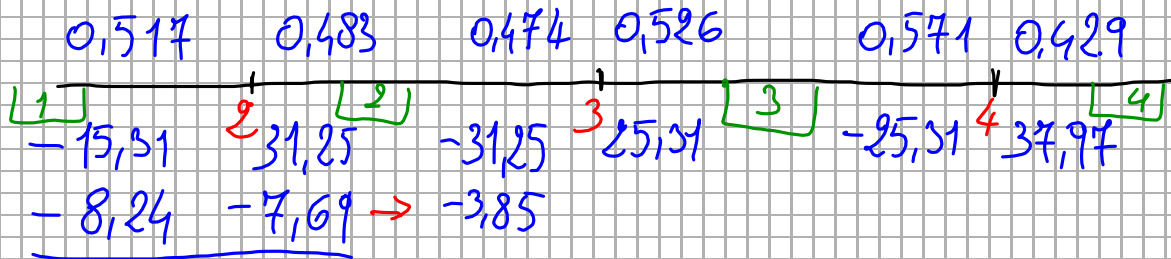
$$\frac{p_2^2}{p_2^2 + p_1^3} = \frac{0,8}{0,8 + 0,889} = 0,474$$

$$\frac{p_1^3}{p_2^2 + p_1^3} = \frac{0,889}{0,8 + 0,889} = 0,526$$



$$\frac{P_2^3}{P_2^3 + P_1^4} = \frac{0,889}{0,889 + 0,667} = 0,571$$

$$\frac{P_1^4}{P_2^3 + P_1^4} = \frac{0,667}{0,889 + 0,667} = 0,429$$



$$- (-15,31 + 31,25) \times 0,517 = -8,24$$

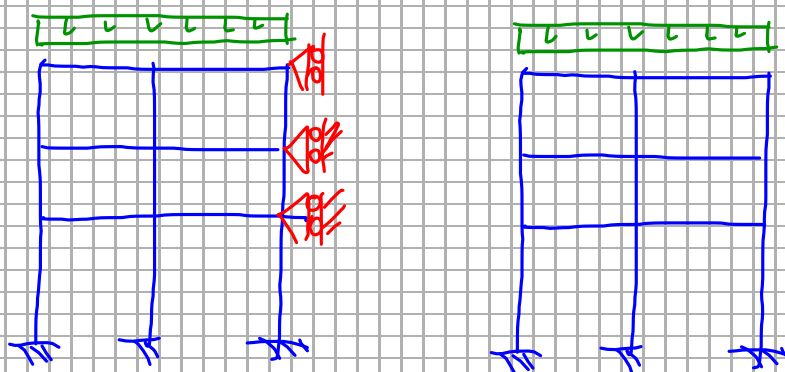
$$-\Delta \bar{M}_i$$

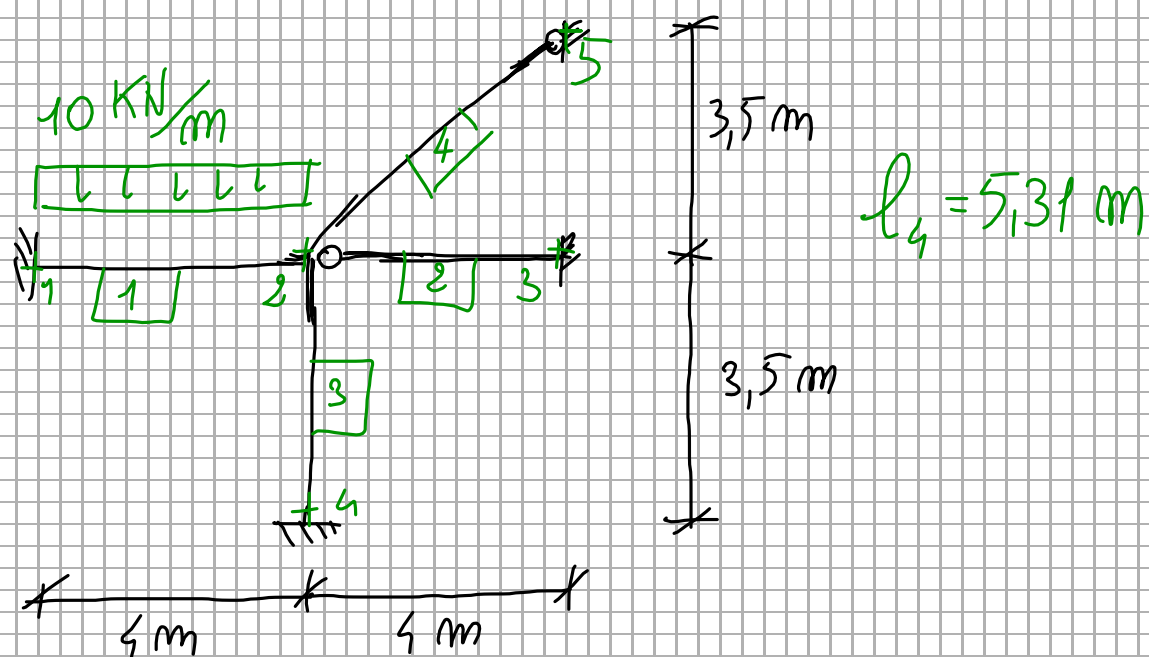
$$- (-15,31 + 31,25) \times 0,483 = -7,69$$

$$-7,69 \times 0,5 = -3,85$$

$$\begin{array}{cccccc}
 0,517 & 0,483 & 0,474 & 0,526 & 0,571 & 0,429 \\
 \hline
 \boxed{1} & & \boxed{2} & & \boxed{3} & & \boxed{4} \\
 -15,31 & 31,25 & -31,25 & 25,31 & -25,31 & 37,97 \\
 -8,24 & -7,69 & \rightarrow & -3,85 & & \\
 \hline
 & 2,32 & \leftarrow & 4,64 & 5,15 & \rightarrow & 2,56 \\
 & & & -4,35 & \leftarrow & & -8,69 & -6,52 \\
 & & & & & & \hline
 & 1,03 & \leftarrow & 2,06 & 2,21 & \rightarrow & 1,14 \\
 & & & & & & \hline
 -1,43 & -1,62 & \rightarrow & -0,81 & & \\
 \hline
 & 0,19 & \leftarrow & 0,38 & 0,43 & \rightarrow & 0,22 \\
 & & & -0,35 & \leftarrow & & -0,78 & -0,58 \\
 & & & & & & \hline
 -25,26 & 25,48 & -28,83 & 28,47 & -30,86 & 30,87
 \end{array}$$

TELAIO A NODI FISSI





	1	2	3	4
P_1	EI	0	$1,14 EI$	$0,56 EI$
P_2	EI	$9,75 EI$	$1,14 EI$	0
P_{12}	$0,5 EI$	0	$0,57 EI$	0
\bar{M}_1	13,33	0	0	0
\bar{M}_2	-13,33	0	0	0

$$\left(\rho_2^1 + \rho_1^2 + \rho_2^3 + \rho_1^4 \right) \varphi_2 = -\bar{m}_2^1$$

$$(1 + 0 + 1,44 + 0,56) EI \varphi_2 = 13,33$$

$$2,7 EI \varphi_2 = 13,33$$

$$EI \varphi_2 = \frac{13,33}{2,7} = 4,93$$

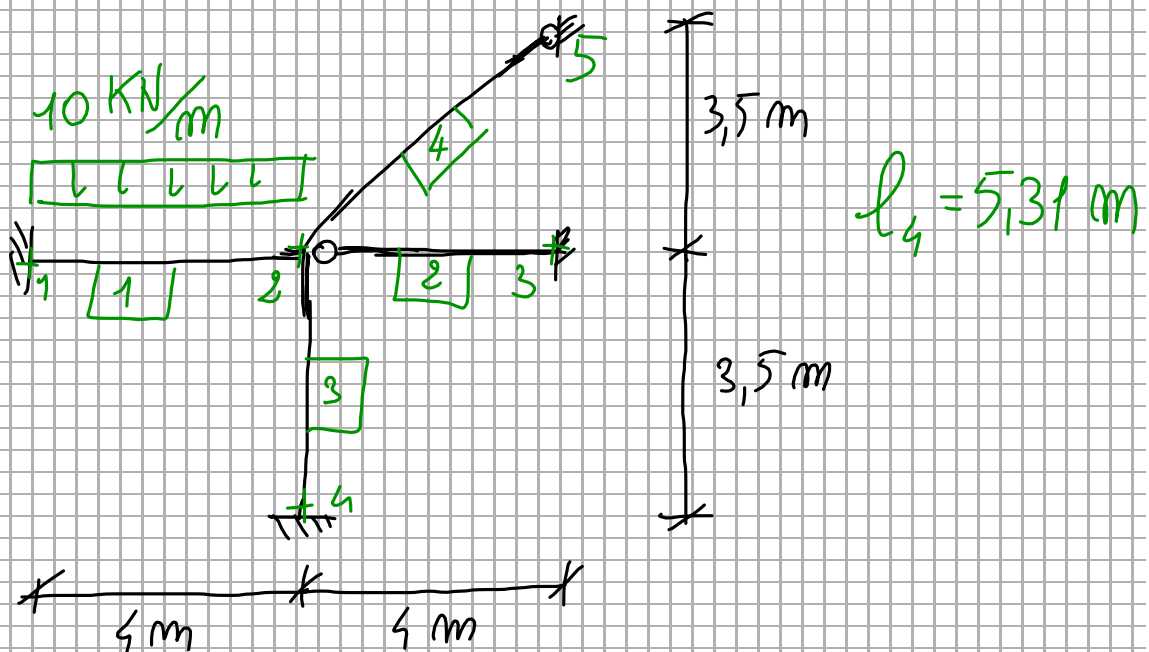
$$m_2^1 = \cancel{\rho_2^1 \varphi_1} + \rho_2^2 \varphi_2 + \bar{m}_2^1$$

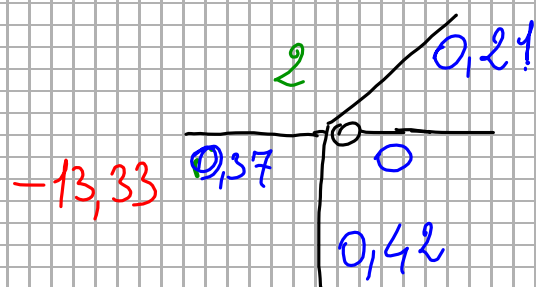
$$= \cancel{EI} \times \frac{4,93}{\cancel{EI}} - 13,33 = -8,4 \text{ KNm}$$

$$M_1^3 = \cancel{P_1^3 \phi_1^3} + P_{12}^3 \phi_2^3 + \cancel{M_1^3}$$

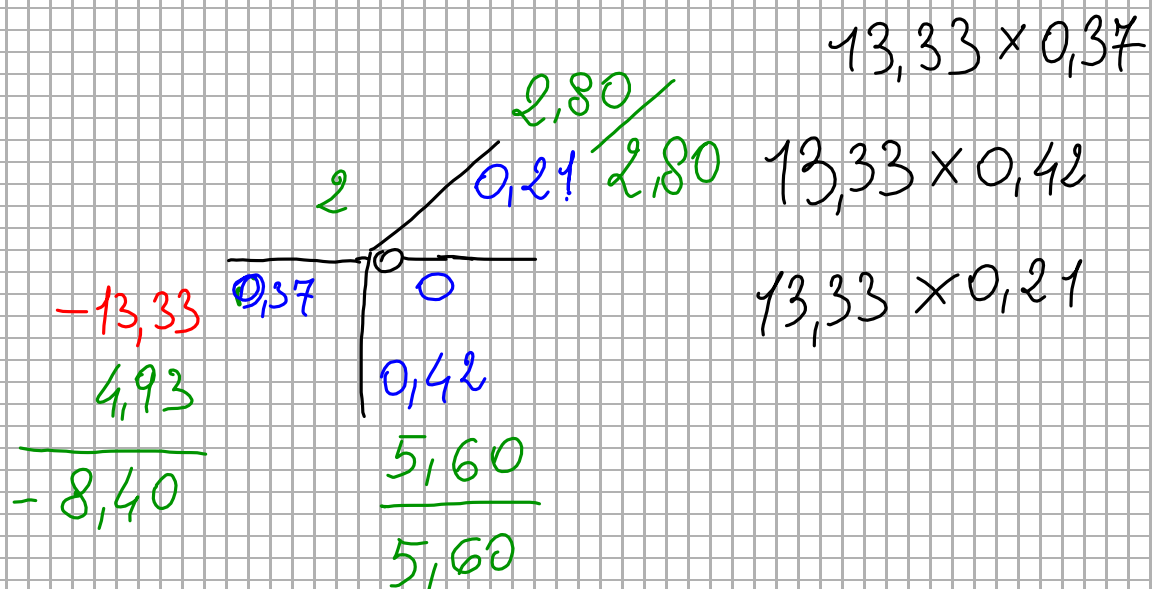
$$= 0,57 \cancel{EI} \times \frac{4,93}{EI} = 2,81 \text{ kNm}$$

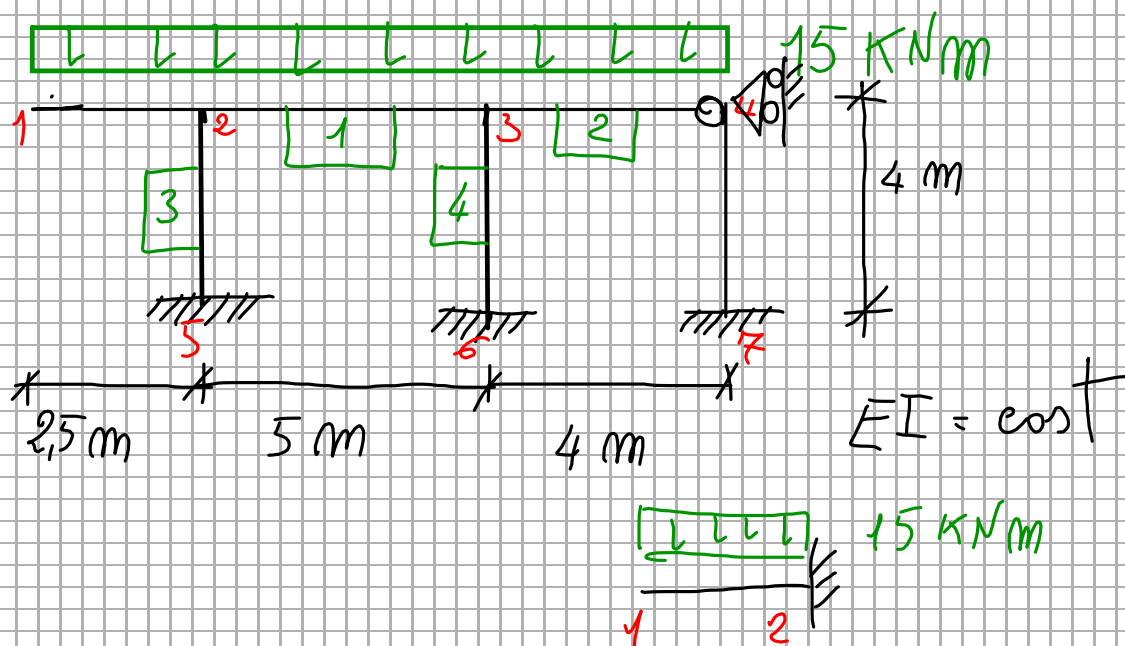
$$M_2^3 = P_2^3 \phi_2^3 = 1,14 \cancel{EI} \times \frac{4,93}{EI} = 5,62 \text{ kNm}$$



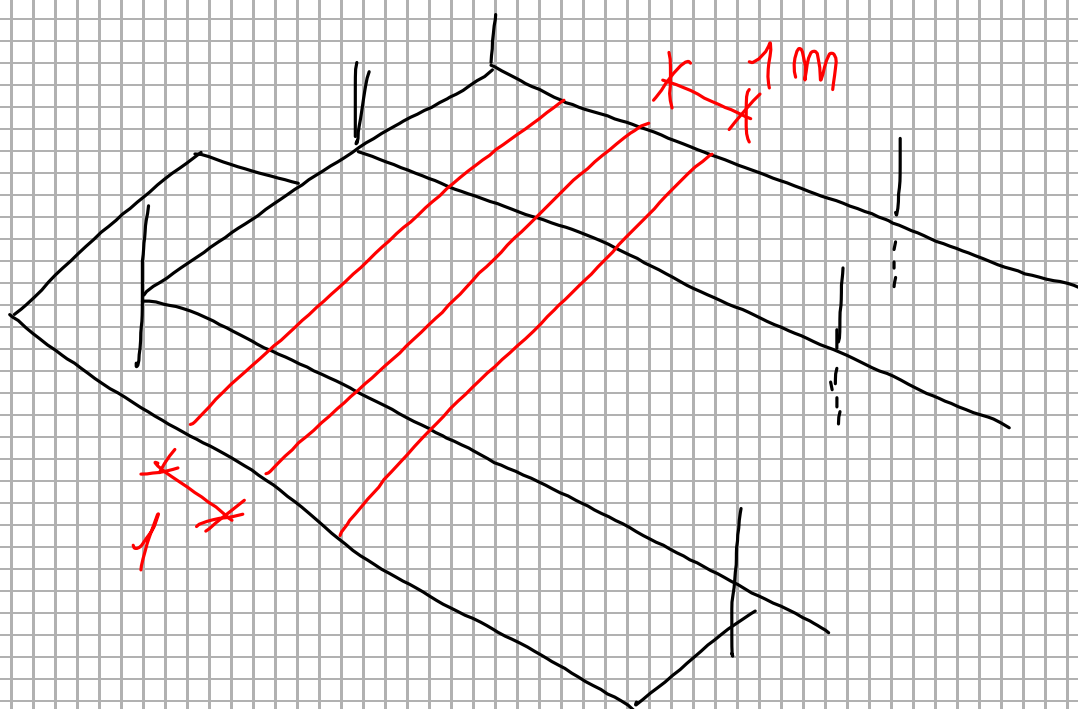


$$\frac{P_2^1}{P_2^1 + P_1^2 + P_2^3 + P_1^4} = \frac{1}{1 + 0 + 1,14 + 0,56} = 0,37$$

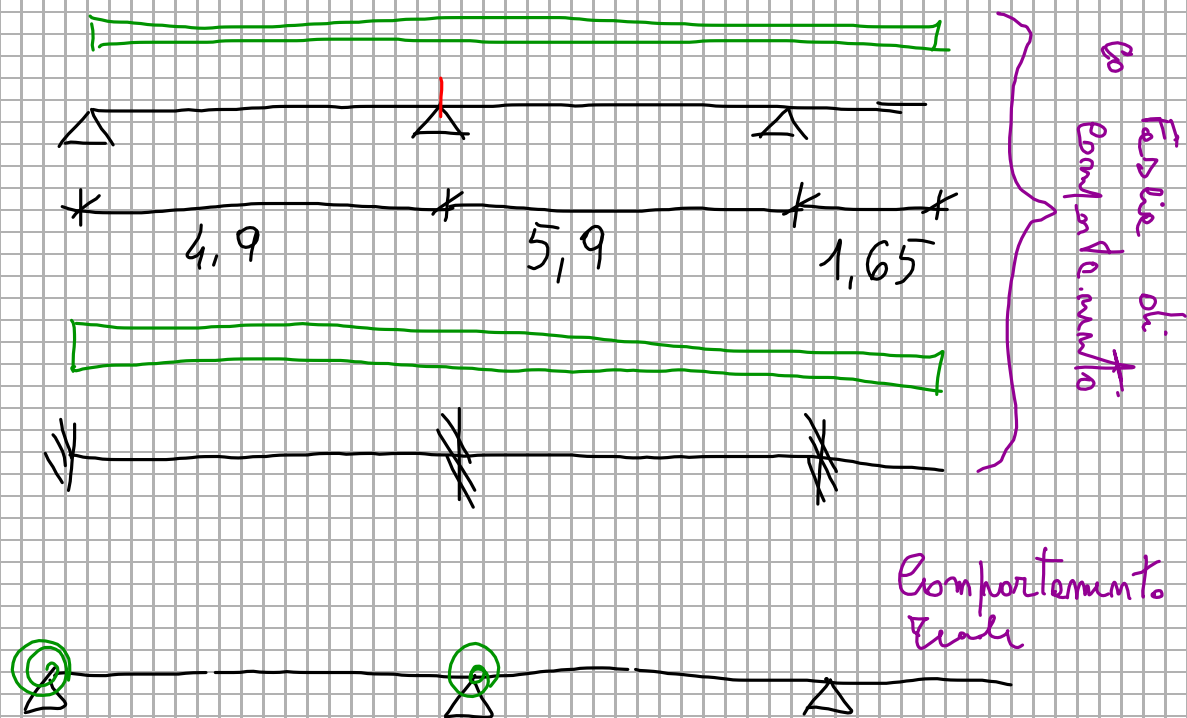




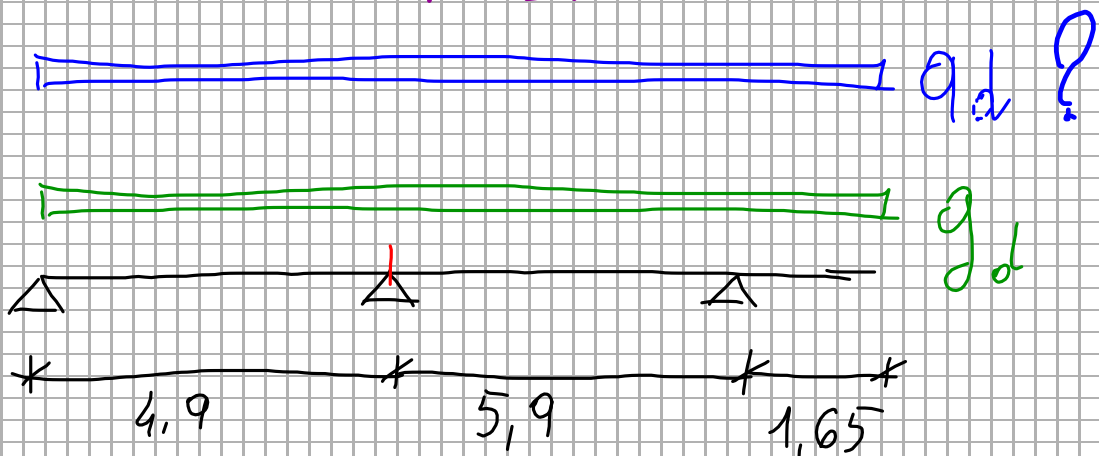
MODELLAZIONE DEL SOLAIO

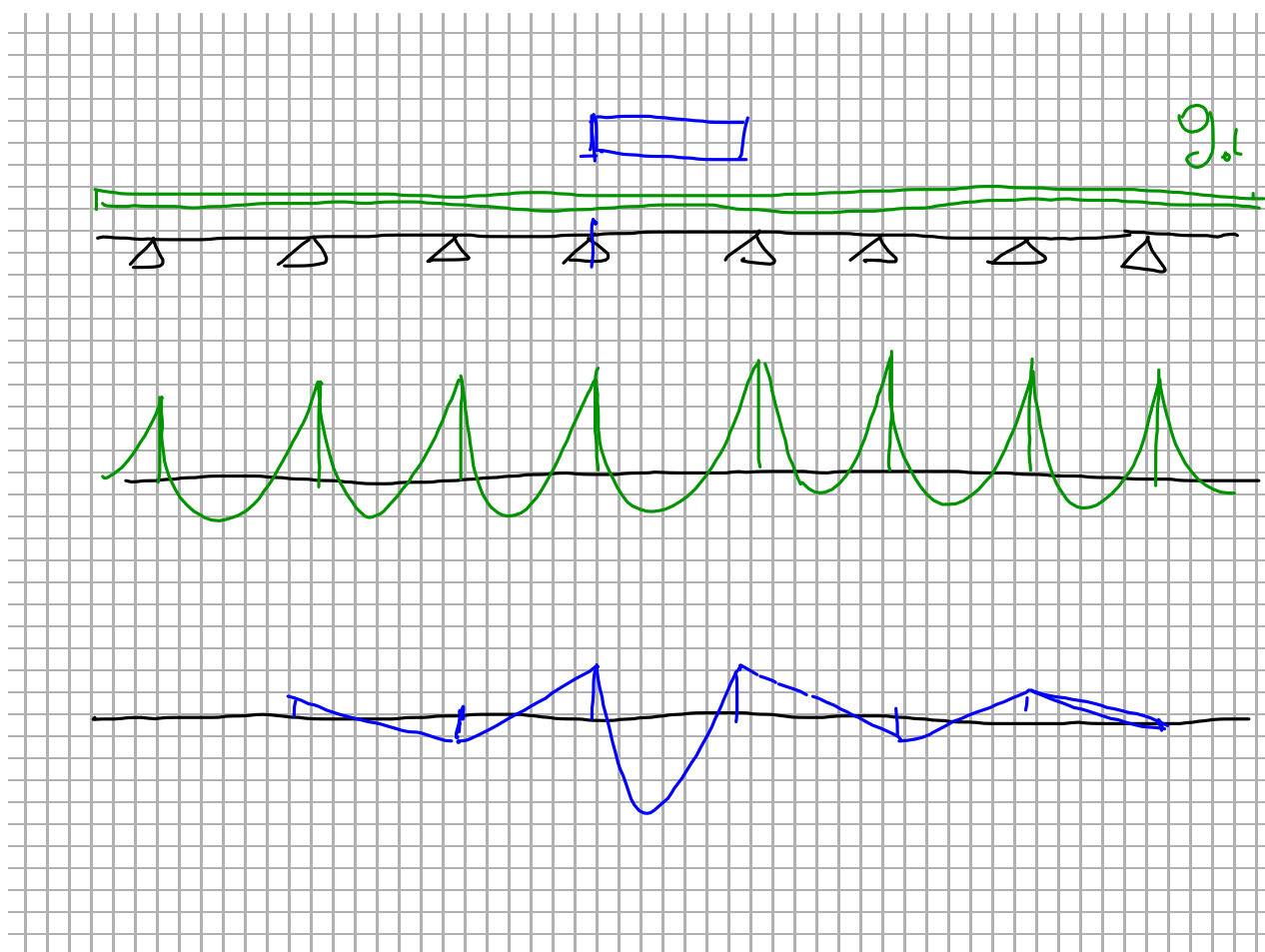
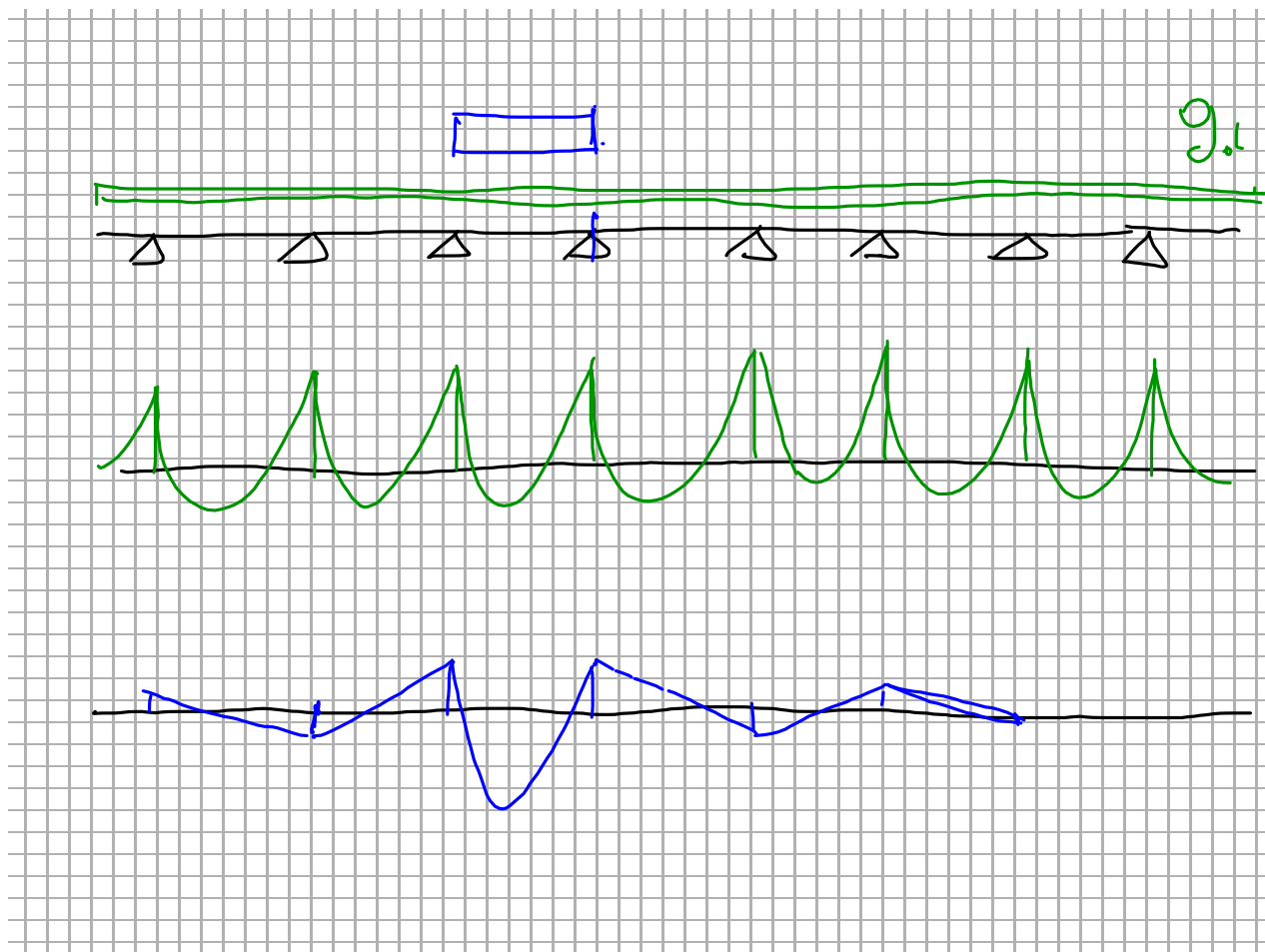


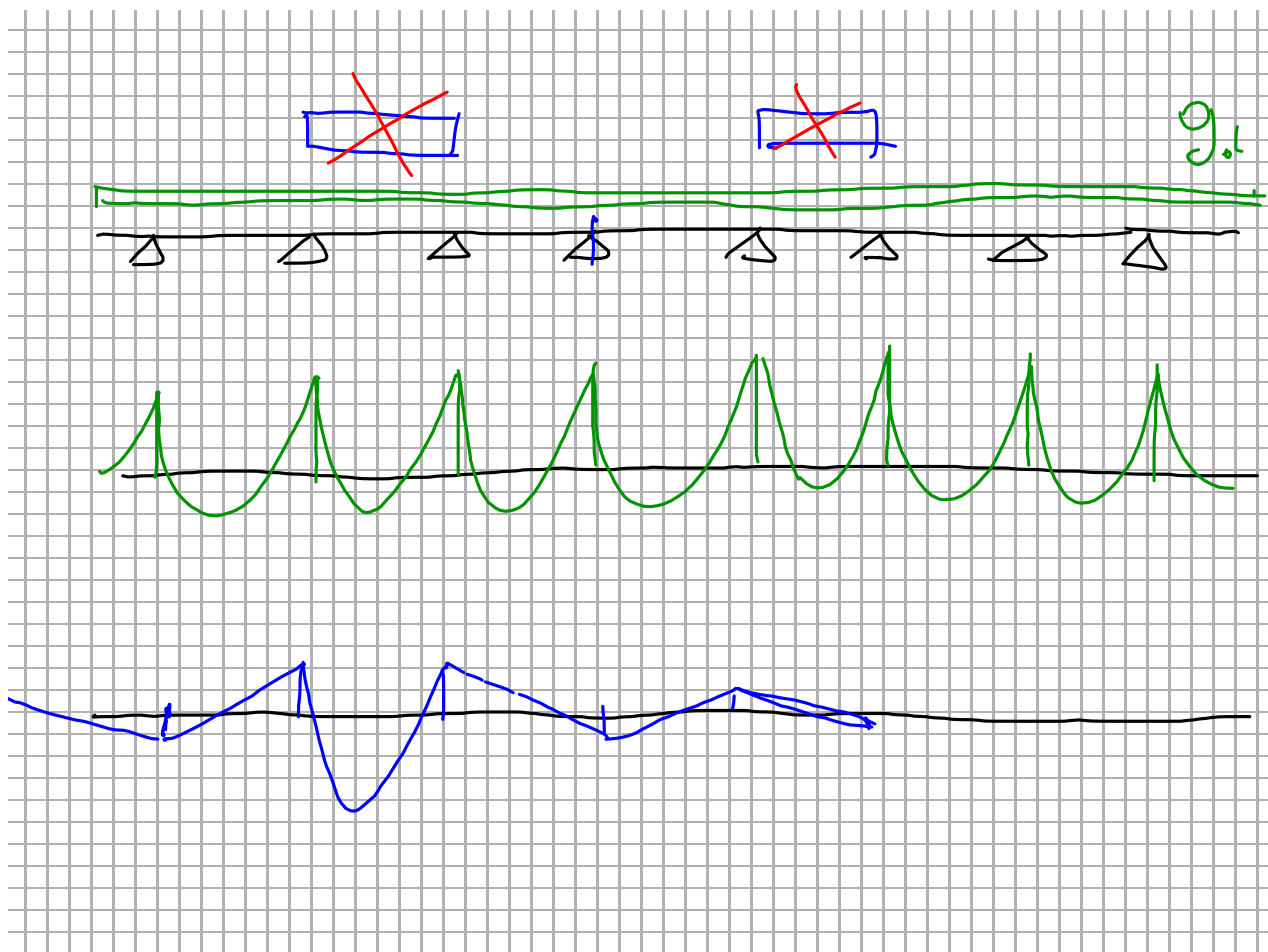
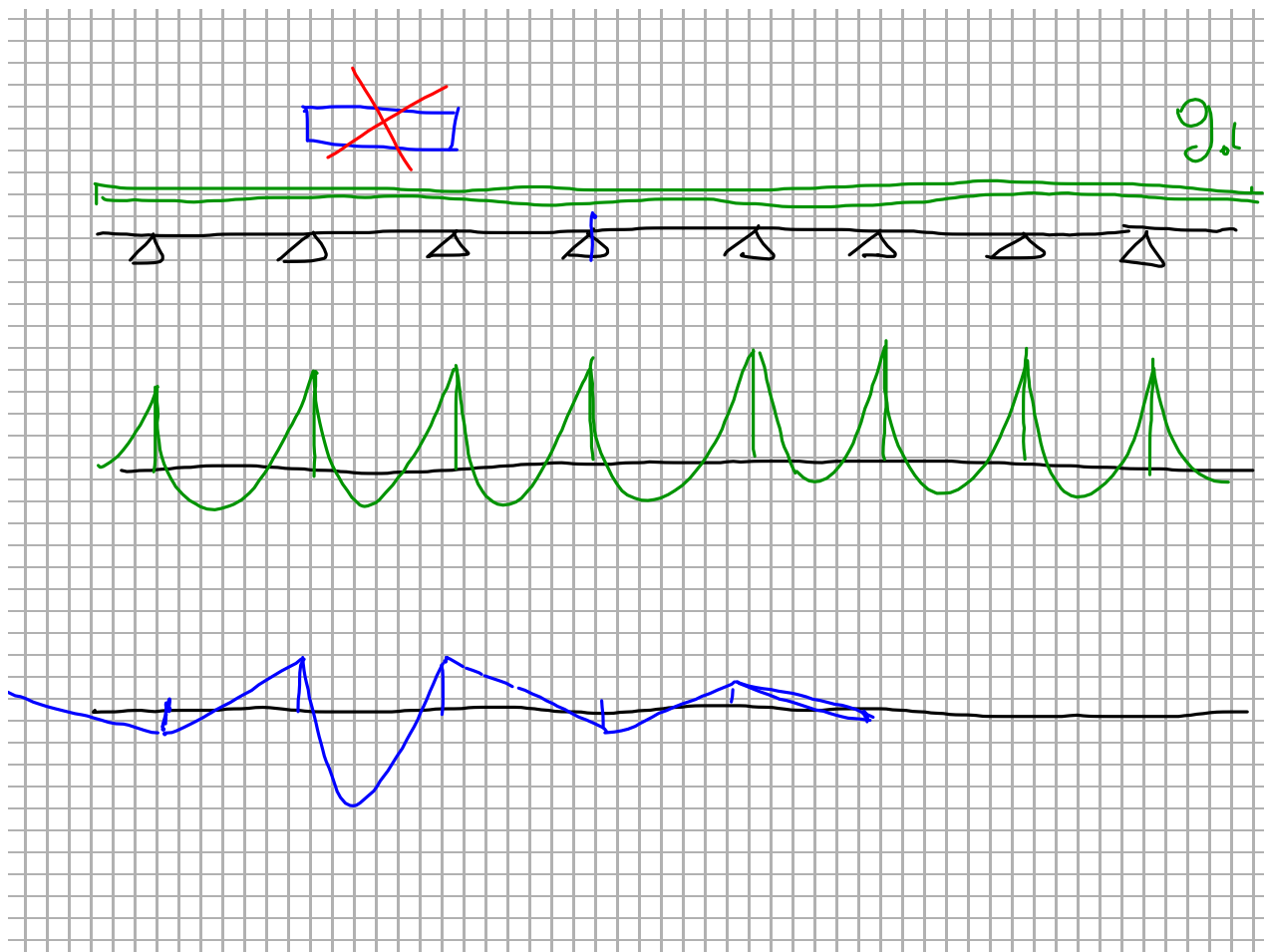
MODELLAZIONE DEL SOLAIO

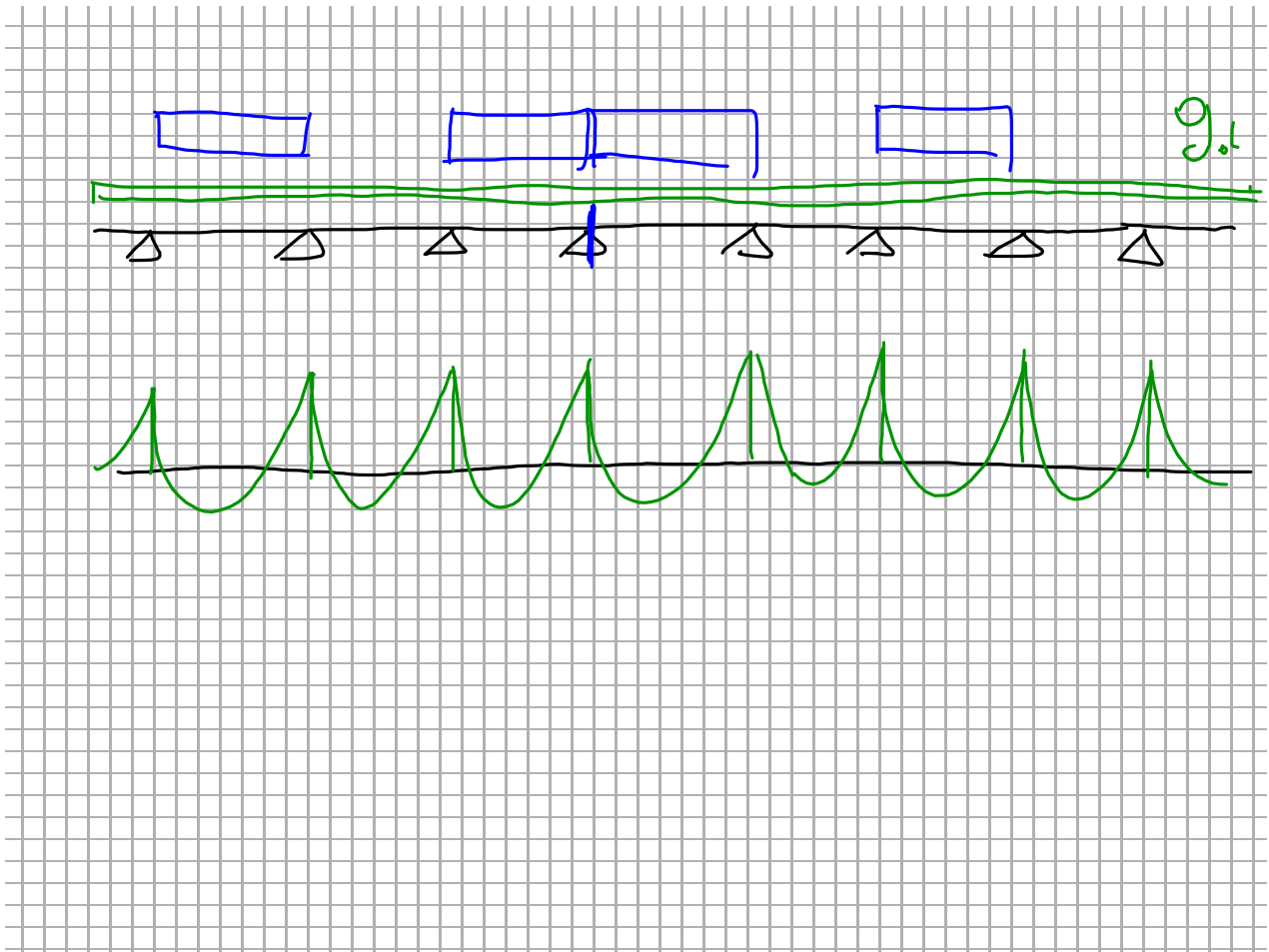
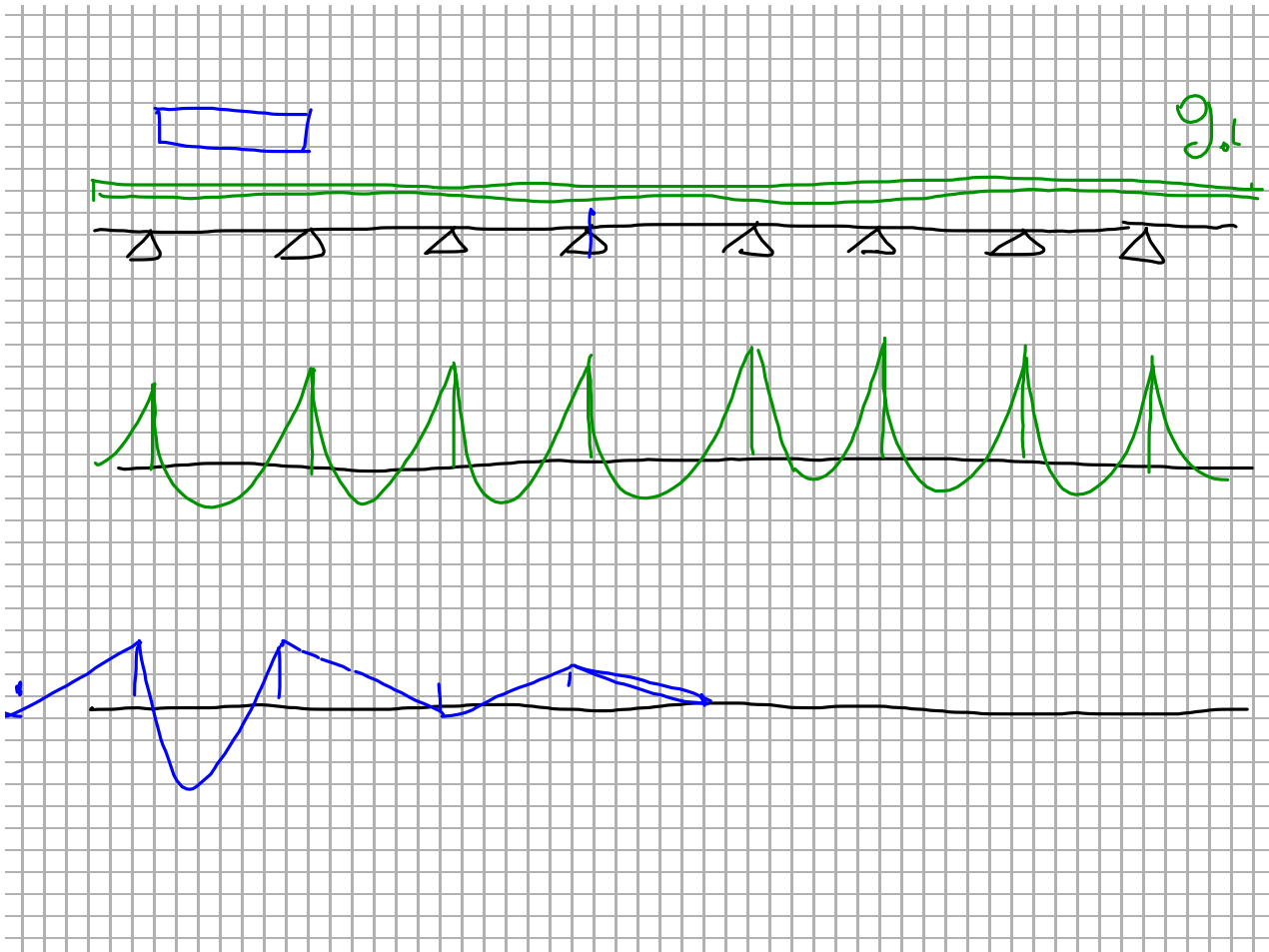


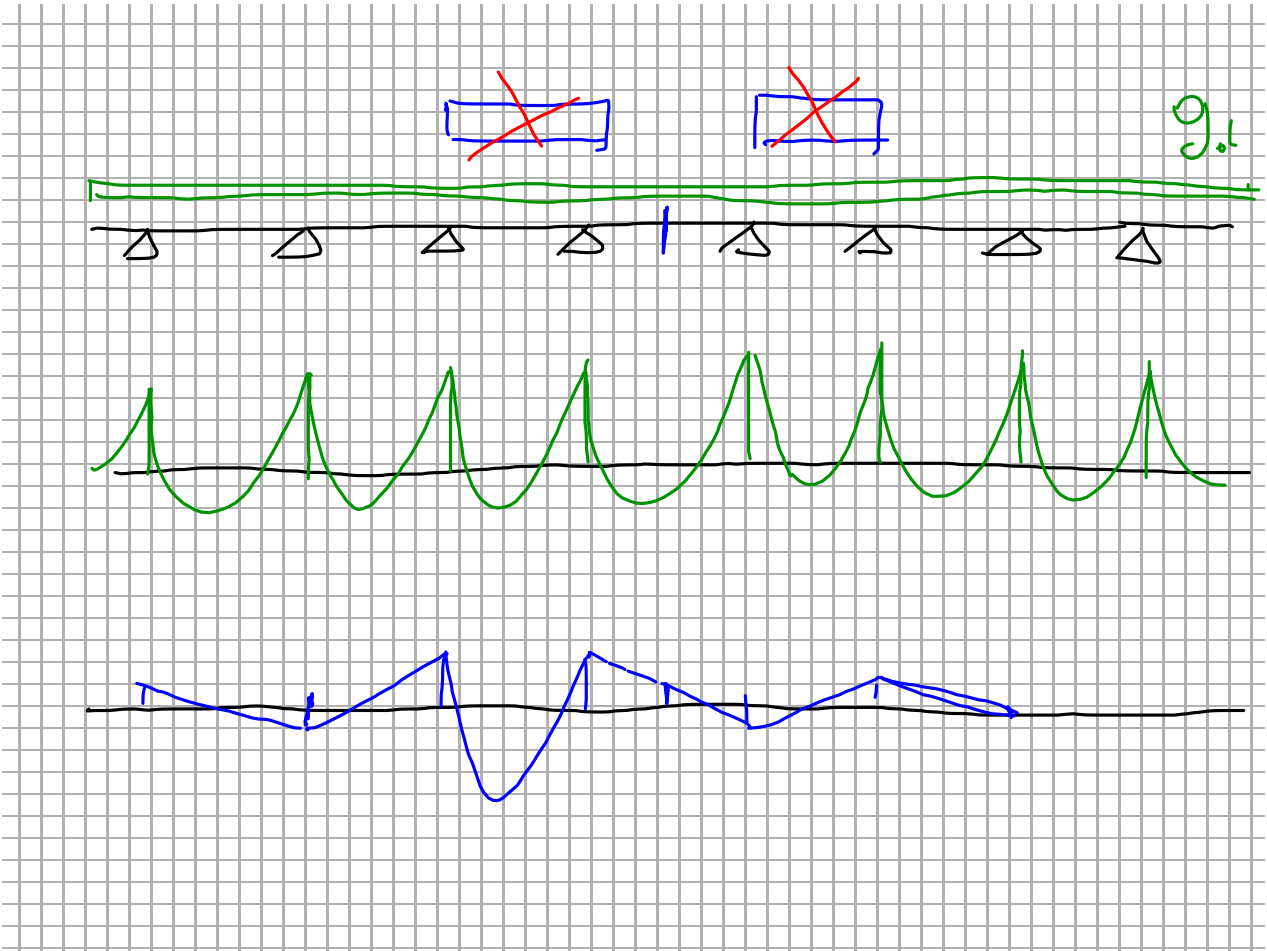
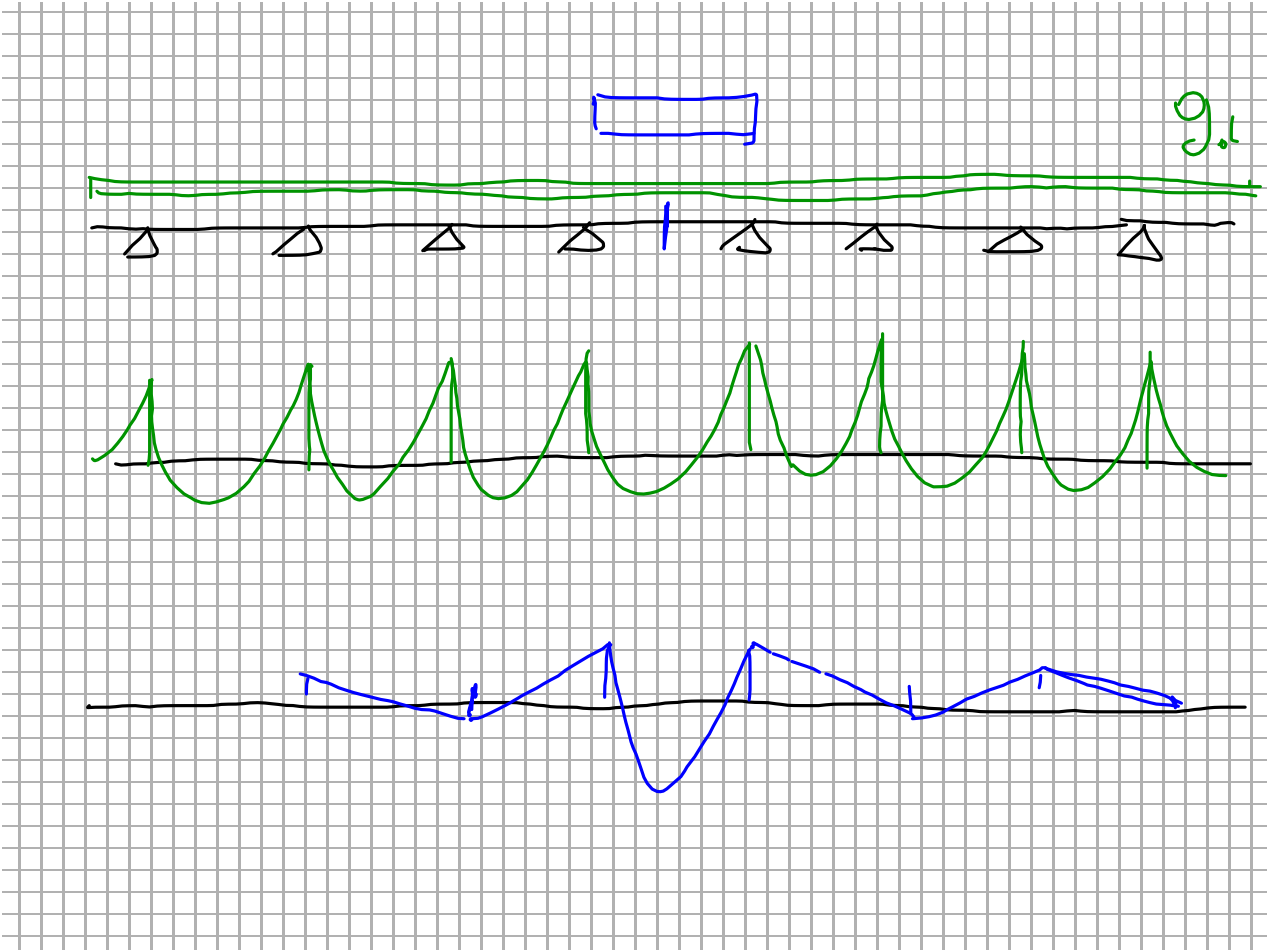
SCHEMI DI CARICO

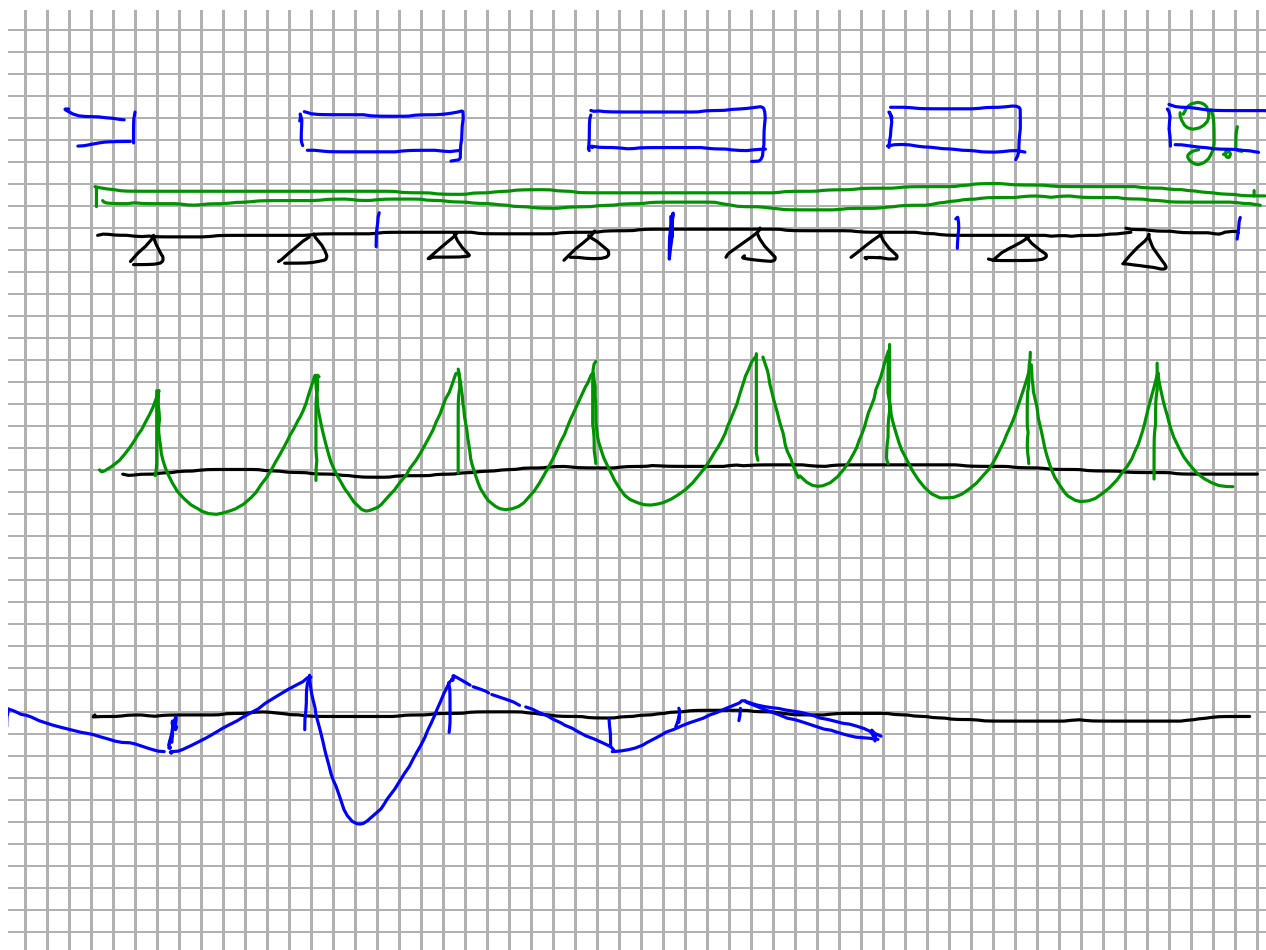
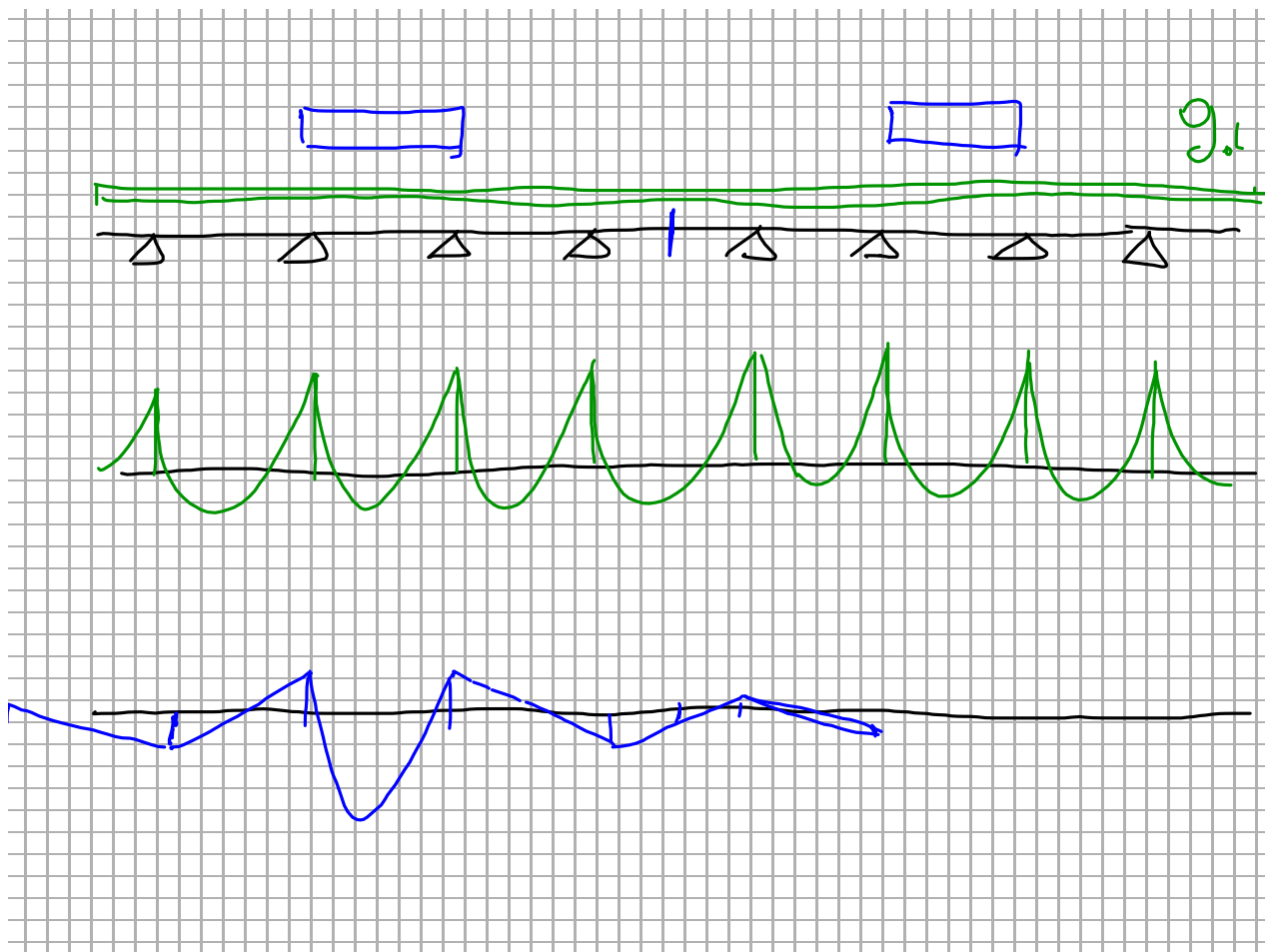












SCHEMI DI CARICO

