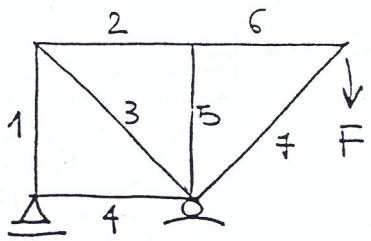
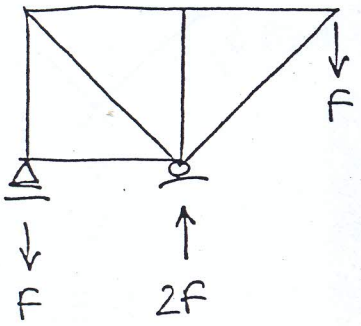
Calcolare la rotazione relativa tra le aste 1 e 2.



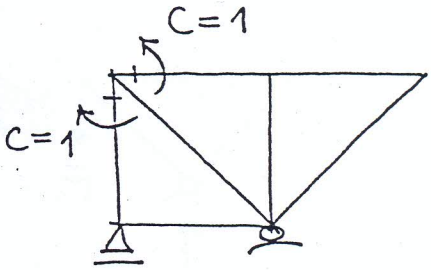


$EA = \text{cost.}$


1)




S.D.

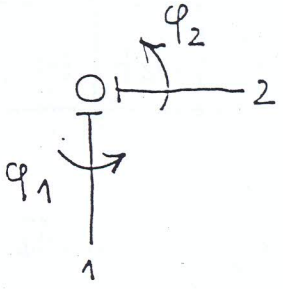



F.S.

$$\Delta\varphi_{12} = \varphi_2 - \varphi_1$$

2)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| $l_i$ | $l$ | $l$ | $\sqrt{2}l$ | $l$ | $l$ | $l$ | $\sqrt{2}l$ |
| $N_i^f$ | 0 | 0 | $-\frac{\sqrt{2}}{l}$ | $\frac{1}{l}$ | $\frac{1}{l}$ | 0 | 0 |
| $N_i^r$ | F | F | $-\sqrt{2}F$ | 0 | 0 | F | $-\sqrt{2}F$ |




3)

$$1\cdot\varphi_2 - 1\cdot\varphi_1 = \frac{1}{EA}\,2\sqrt{2}F$$

$$\Rightarrow \Delta\varphi_{12} = \frac{2\sqrt{2}F}{EA}$$