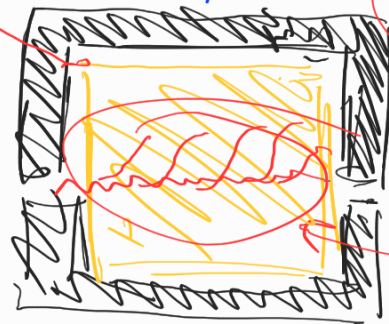
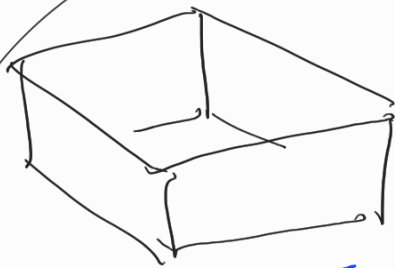
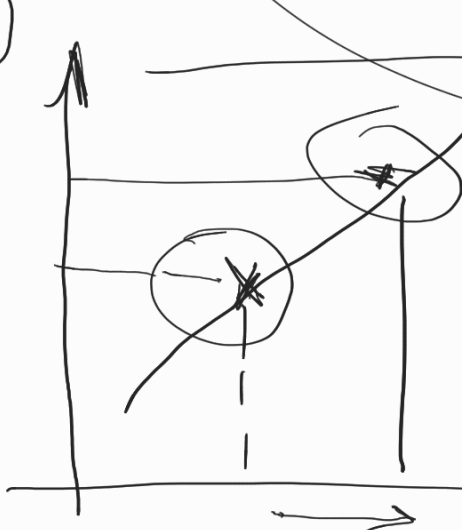


ESERCIZIO 3.4



$$\sigma_F = \frac{P}{A} \quad \tau_F = \frac{T}{A}$$

2

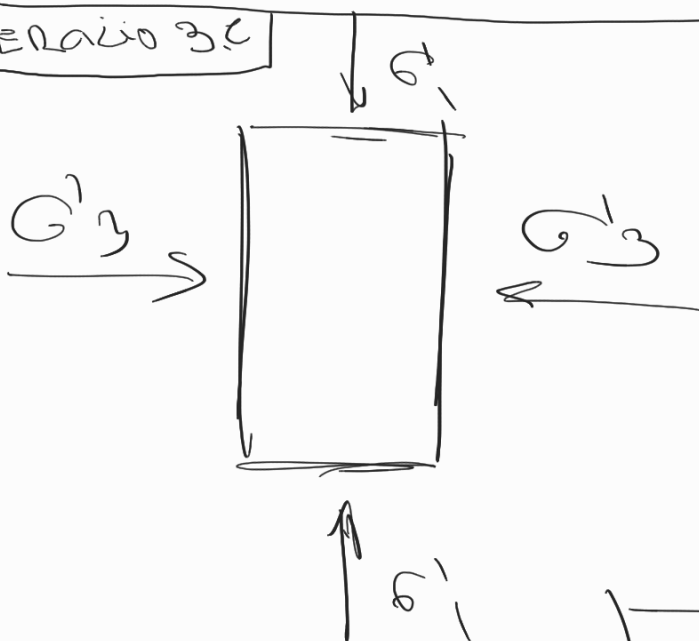


$$\tau_F = \sigma_F \cdot \tan \phi$$



P

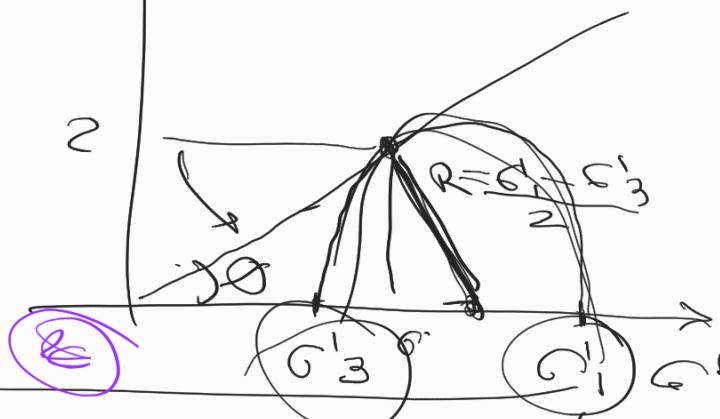
ESERCIZIO 3.5



σ_1, σ_3

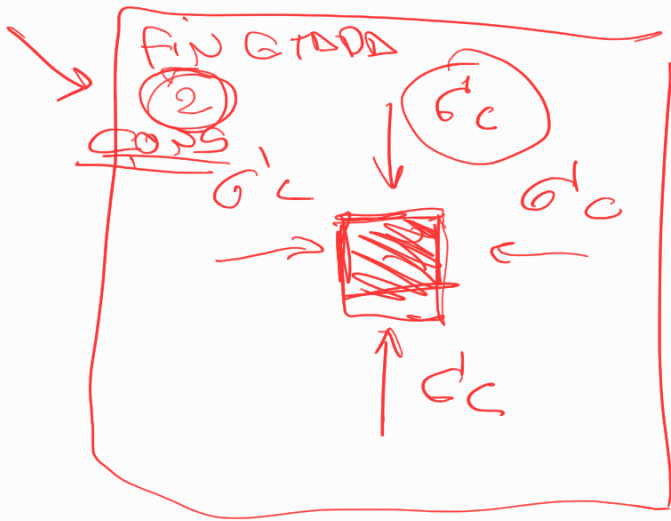
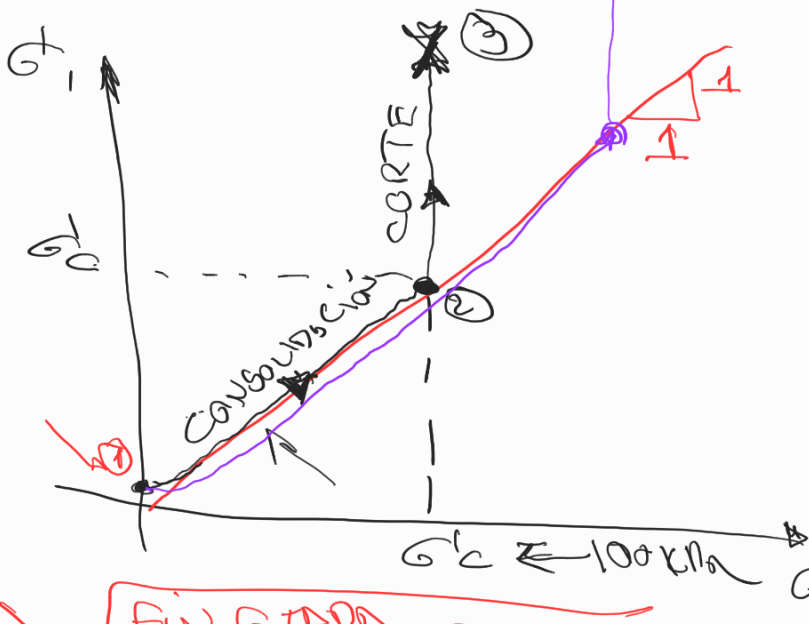
2

2



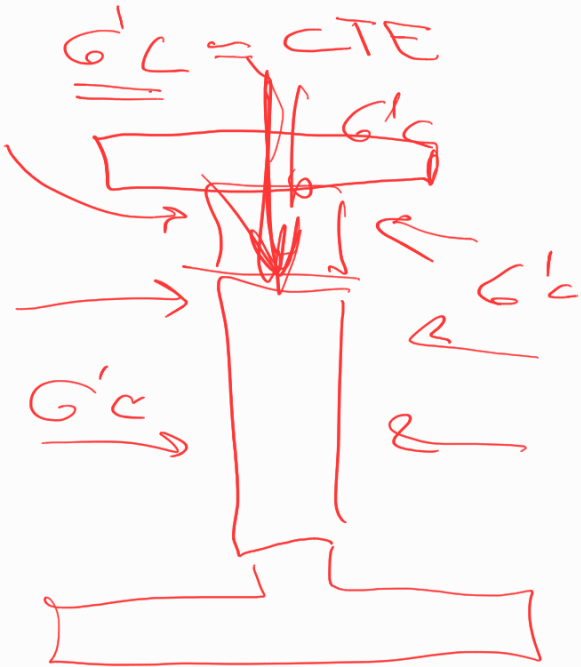
$$N_\phi = \frac{1 + \sin \phi}{1 - \sin \phi}$$

$N_\phi = \sigma_1$



$$\sigma'_c = \sigma'_3 + u$$

2 $u \rightarrow 0$



$$N_{\phi} = \frac{\sigma'_1}{\sigma'_3}$$



$$N_{\phi 1} \rightarrow \phi_1$$

$$N_{\phi 2} \rightarrow \phi_2$$

$$N_{\phi 3} \rightarrow \phi_3$$

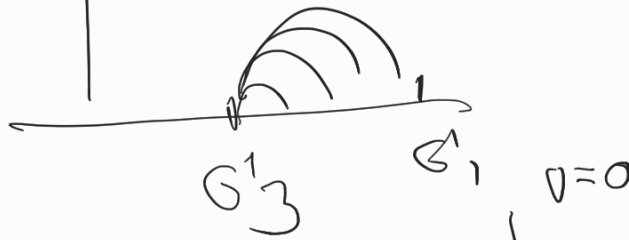
$$\sigma'_1 \text{ MAX}$$



$$\phi_{\text{MAX}} - \phi_{\text{CV}}$$

Exercício 3.4

$$\sigma_2 = q = \sigma'_1 - \sigma_3$$



$$\sigma_3 = 200 \text{ kPa}$$

$$\sigma_3 = \sigma'_{3F} + U$$

$$\frac{\sigma'_1}{\sigma'_3} = N\phi = \frac{1 + \sin\phi}{1 - \sin\phi}$$

$$\sigma'_1 = \left[\frac{1 + \sin\phi}{1 - \sin\phi} \right] \cdot \sigma'_3$$

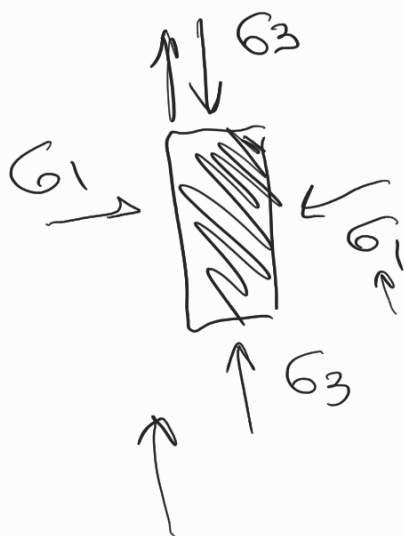
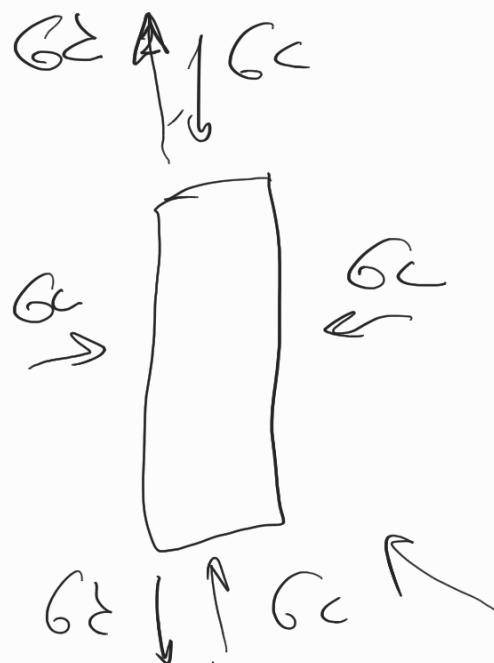
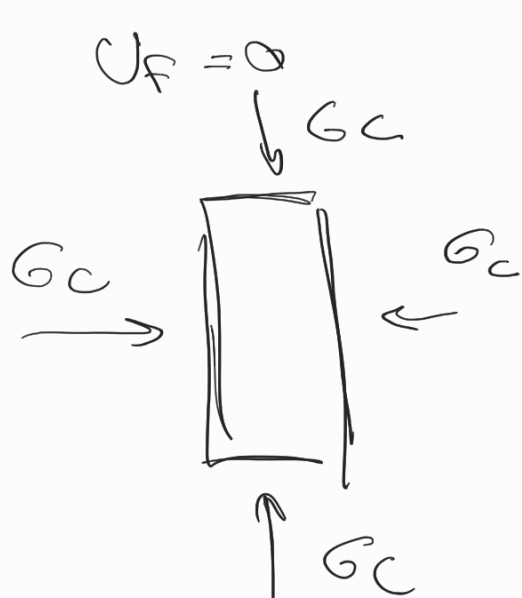
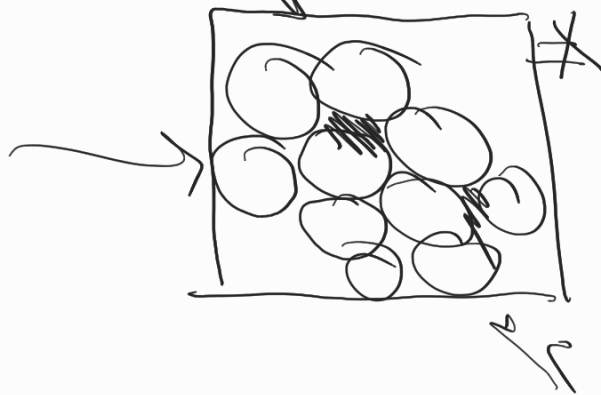
$$\sigma_3 = \sigma'_{3F} + U_F$$

$$\begin{cases} \sigma_2 = \sigma'_{1F} - \sigma'_{3F} \text{ (1)} \\ \sigma'_{1F} = N\phi \cdot \sigma'_{3F} \text{ (2)} \end{cases}$$

$$\sigma_2 = (N\phi - 1) \sigma'_{3F}$$

$$\sigma'_{3F} = \frac{\sigma_2}{(N\phi - 1)}$$

$$U_F = \sigma_3 - \sigma'_{3F}$$



$$\sigma_d = \sigma_1 - \sigma_3$$

$$\sigma'_1 = 150 \text{ kPa}$$

$$\sigma'_1 = N \phi \cdot \sigma'_3$$

$$\sigma'_3 = \frac{\sigma'_1}{N \phi}$$

$$\sigma_d = \sigma_1 - \sigma_3$$