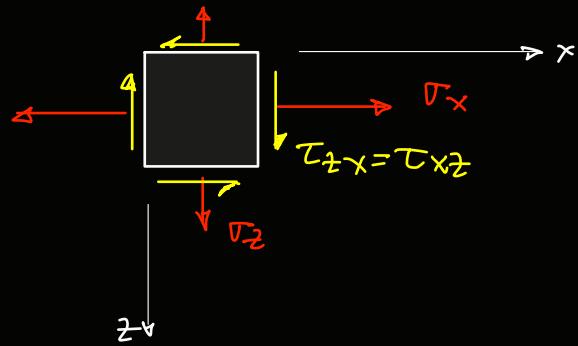
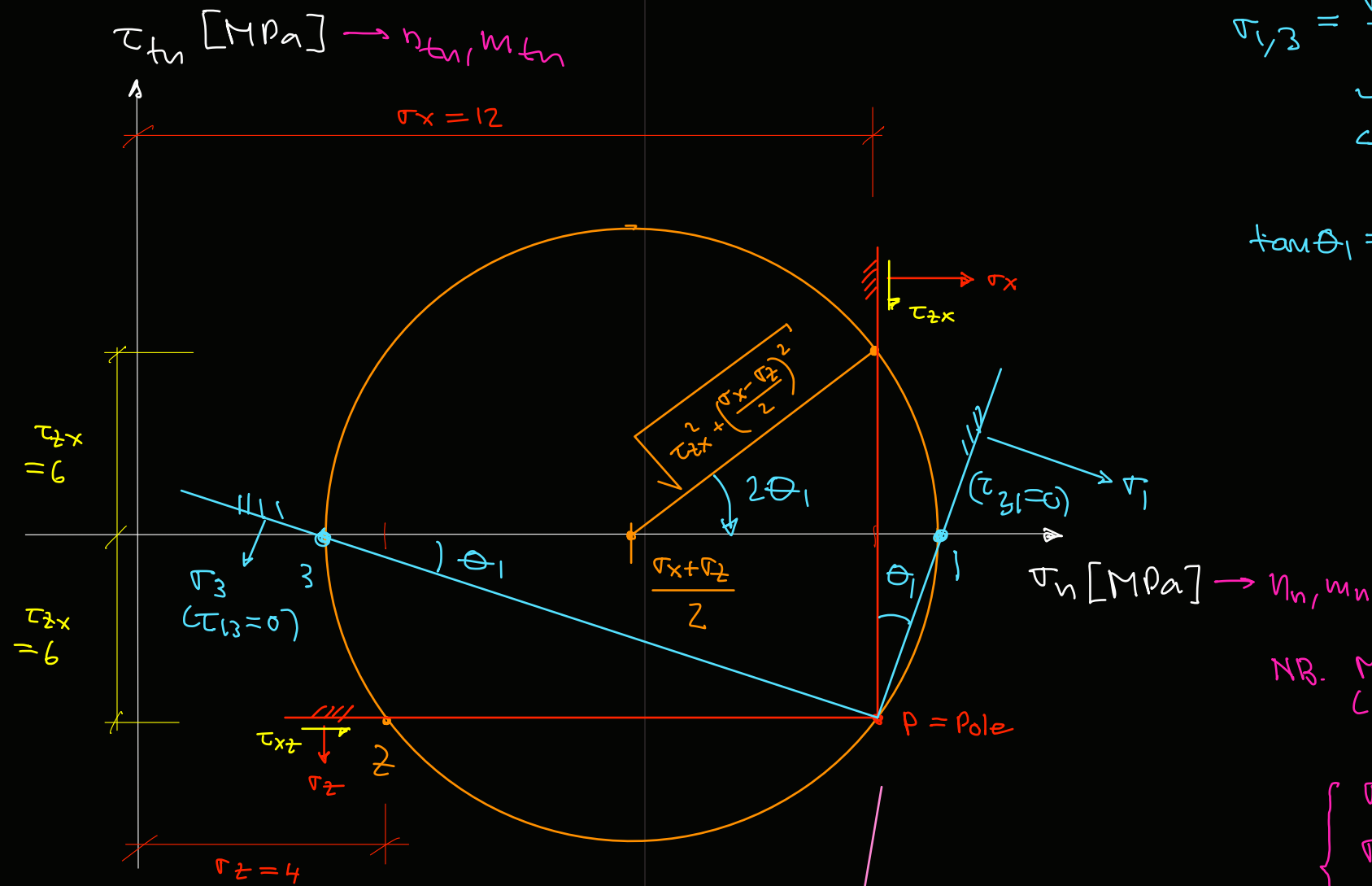
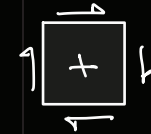


Mohr's circle (with pole!)

stress state (physical plane) :

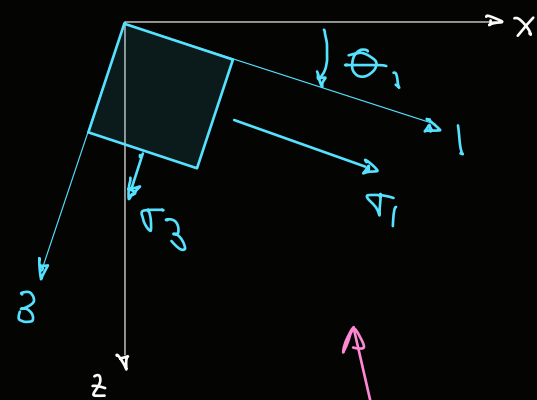


Mohr's plane :



$$\sigma_{1,3} = \underbrace{\frac{\sigma_x + \sigma_z}{2}}_{\text{centre}} \pm \underbrace{\sqrt{\tau_{xz}^2 + \left(\frac{\sigma_x - \sigma_z}{2}\right)^2}}_{\text{radius}}$$

$$\tan \theta_1 = \frac{\sigma_1 - \sigma_x}{\tau_{xz}} = \frac{\tau_{xz}}{\sigma_2 - \sigma_3}$$



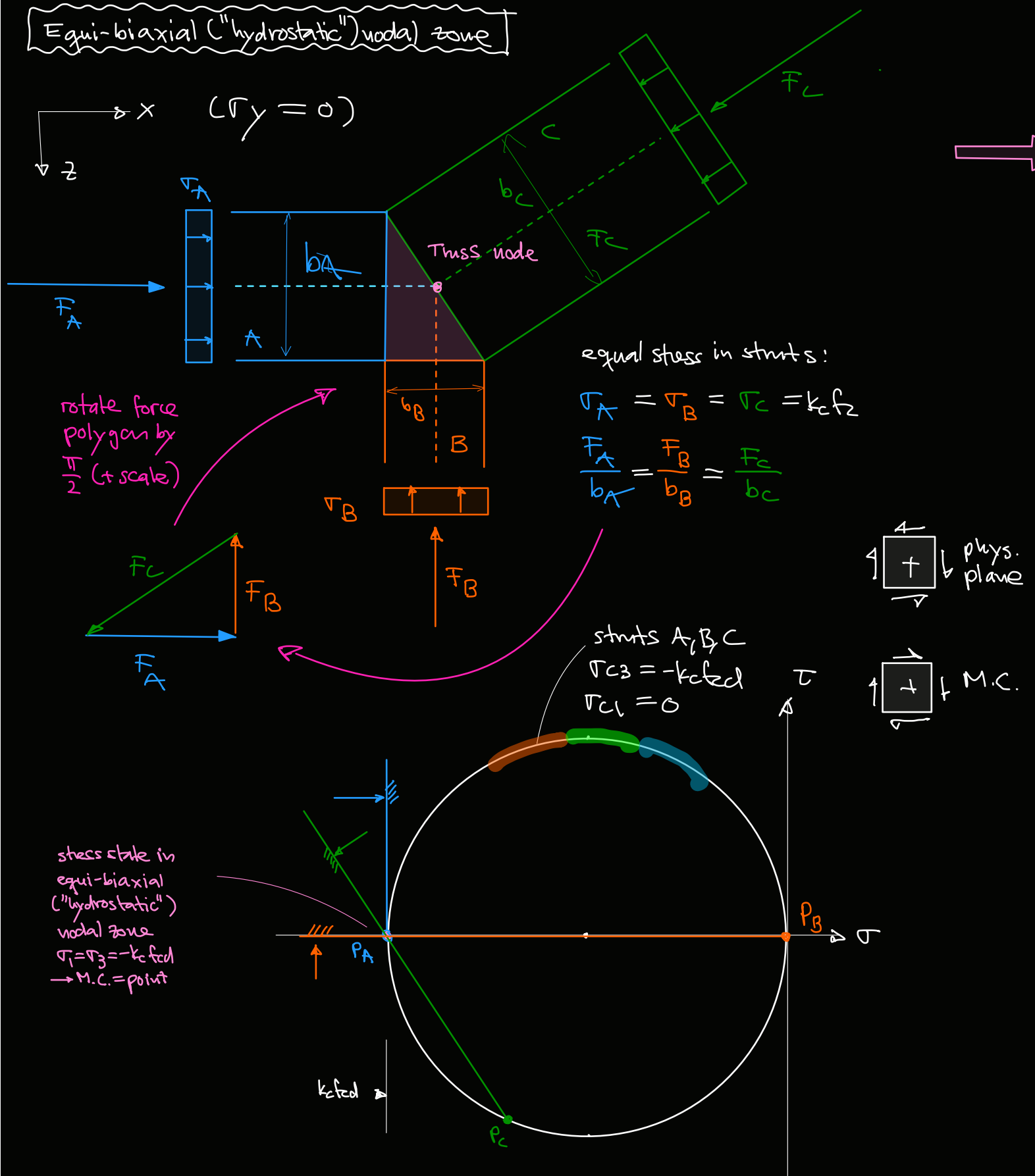
NB. Mohr's circle analogous for (incl. pole)

$\begin{Bmatrix} \sigma_x \\ \sigma_z \\ \tau_{xz} \end{Bmatrix}$	$\begin{Bmatrix} n_x \\ n_z \\ n_{xz} \end{Bmatrix}$	$\begin{Bmatrix} m_x \\ m_y \\ m_{yx} \end{Bmatrix}$
[MPa]	$\left[\frac{kN}{m}\right]$	$\left[\frac{kNm}{m} = kN\right]$

NB. τ_{xz} negative in M.C.
= positive in physical plane ✓

Pole = link to physical plane

Equi-biaxial ("hydrostatic") nodal zone



General biaxial nodal zone

only change:
 $\frac{b_C}{b_C} > b_C$

