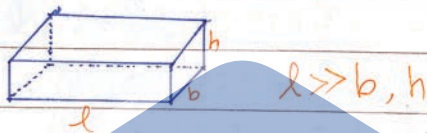


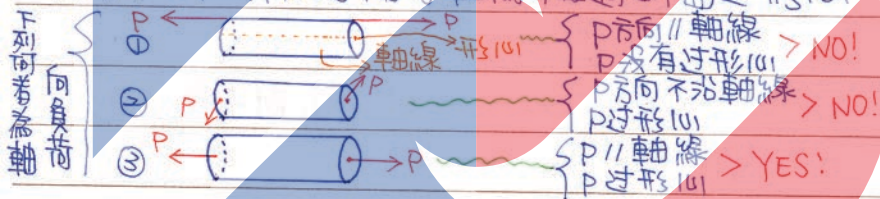
No. P117 Axial load
Date : 軸向 負載

⇒ 求此負荷下之 $\begin{cases} \sigma = ? \\ \delta = ? \end{cases}$

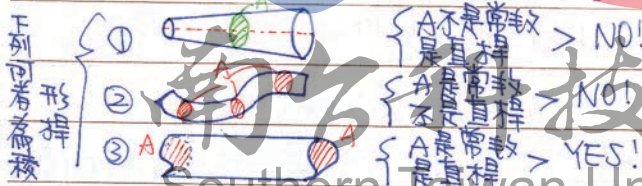
bar or rod : 某方向(2方向)尺寸遠大於其餘二方向尺寸



axial load : 外力沿物體軸線, 且過断面之形心



prismatic bar : 截面形狀, 尺寸不變之直桿



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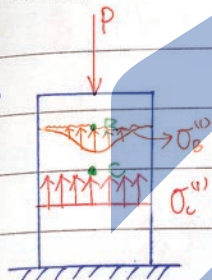
P118 ~ P119

Saint Venant's principle :

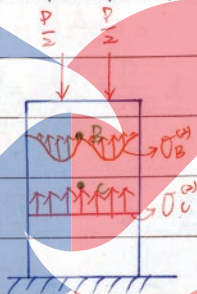
⇒ 若考慮物體內之某處应力, 假設該處遠離作用處, 則該處之应力狀態和外力形式無關, 只和外力合力(矩)有關。

ex:

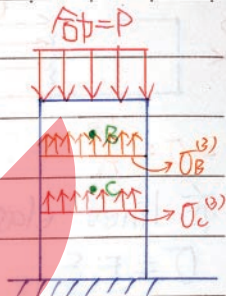
①



②



③



∵ B 點靠近外力作用處，所以 B 點之應力狀態和外力

形式有關 $\Rightarrow \sigma_B^{(1)} \neq \sigma_B^{(2)} \neq \sigma_B^{(3)}$

C 點遠離外力作用處，C 點之應力只和外力合力 (= 圖外

力合力 = P) 有關，因此 $\sigma_C^{(1)} = \sigma_C^{(2)} = \sigma_C^{(3)} = \frac{P}{A}$