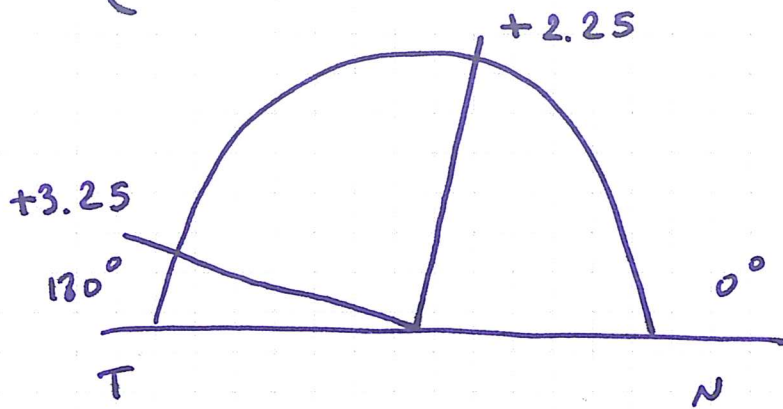


Exercício ①

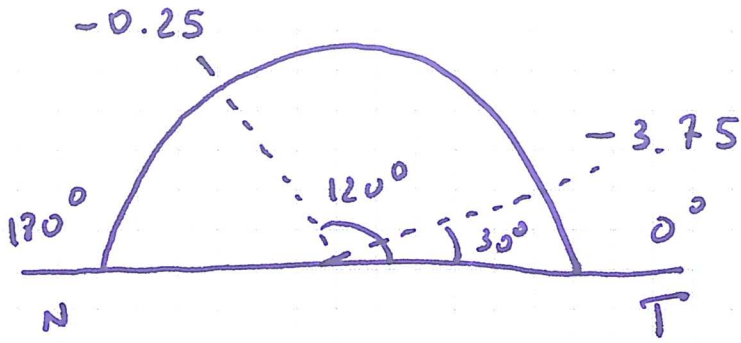
$$\begin{cases} + 3.25 \times 80^\circ \\ + 2.25 \times 170^\circ \end{cases}$$



$$\begin{cases} + 3.25 / -1.00 \times 170^\circ \\ + 2.25 / +1.00 \times 80^\circ \end{cases}$$

# ESERCIZIO ②

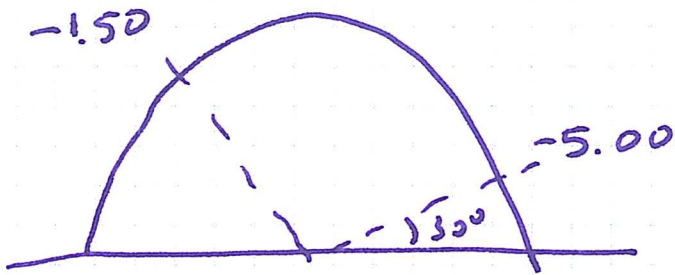
$$-3.75 / +3.50 \times 150^\circ \text{ OSSI}$$



$$\left\{ \begin{array}{l} -0.25 \times 30^\circ \\ -3.75 \times 120^\circ \end{array} \right.$$

$$+1.25 + x = -0.25 \quad x = -1.50$$

$$+1.25 + x = -3.75 \quad x = -5.00$$



$$\frac{-1.50 / -3.50 \times 120^\circ}{+1.25}$$

$$l = -1.50 \text{ m}$$

$$\overline{\Phi}_{45} = +2.00$$

$$\overline{\Phi}_{135} = +3.00$$

$$\frac{1}{l'} = \frac{1}{l} + \frac{1}{f}$$

$$a \ 45^\circ \quad \frac{1}{l'} = +\frac{1}{-1.50} + 2.00 \Rightarrow \frac{1}{l'} = 1.33$$

$$l' = 0.75 \text{ m}$$

$$a \ 135^\circ \quad \frac{1}{l'} = -\frac{1}{1.50} + 3.00 \Rightarrow \frac{1}{l'} = 2.33$$

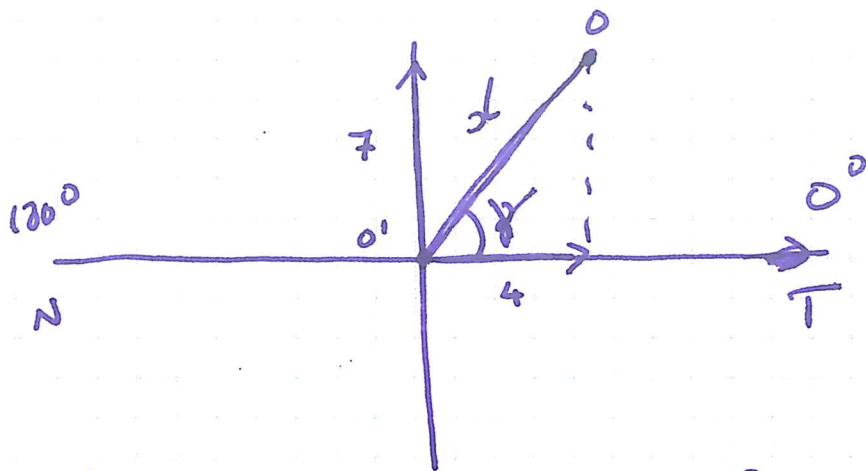
$$l' = 0.43 \text{ m}$$

$$\frac{2}{l'_{nc}} = \frac{1}{l'_{45}} + \frac{1}{l'_{135}} = 1.33 + 2.33 = 3.66$$

$$l'_{nc} = \frac{2}{3.66} \approx 0.55 \text{ m}$$

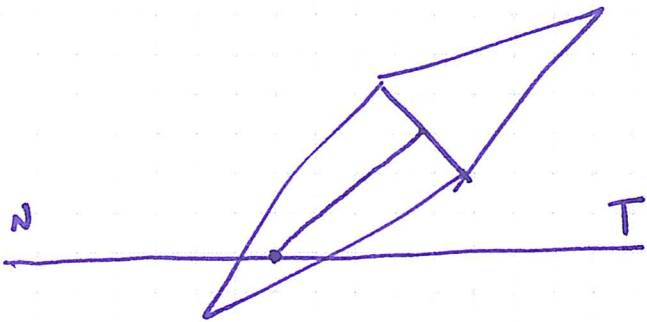
# ESERCIZIO (4)

$$\overline{\Phi} = +2.50 \Delta \quad OS$$



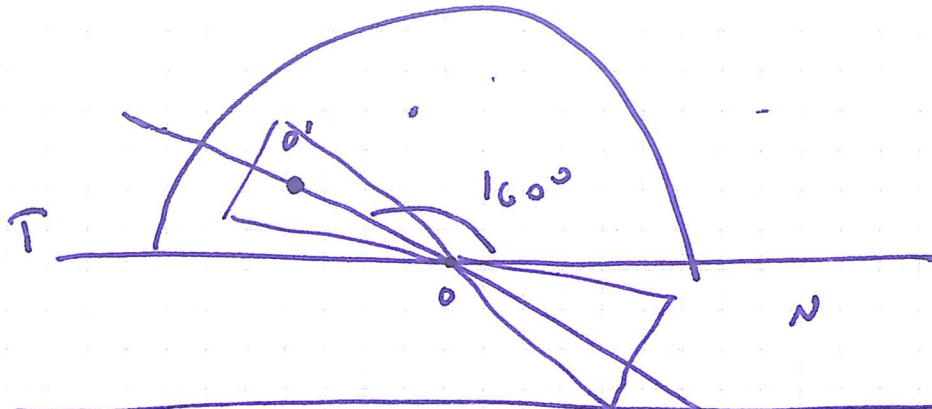
$$\text{tg } \gamma = \frac{7}{4} \quad \gamma = 60^\circ \quad d = \sqrt{4^2 + 7^2} = 8 \text{ mm}$$

$$Z = 0.8 \cdot 2.5 = \boxed{2 \Delta \text{ a } 60^\circ \text{ BT}}$$

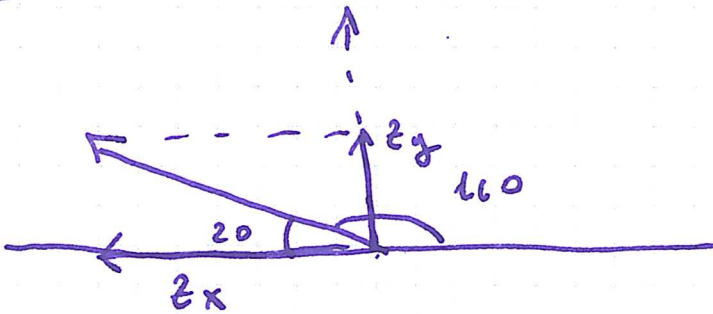


$-1.25 \times 70^\circ$  OD

$160^\circ$  5mm radius la țevie.



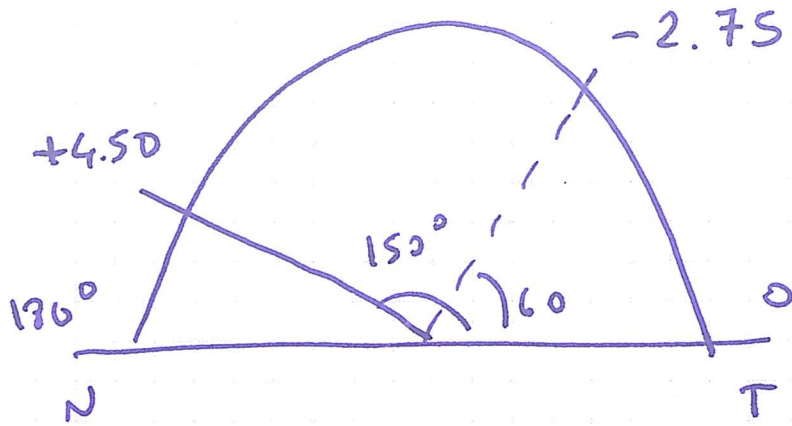
$$Z = +0.5 \cdot 1.25 \approx 0.6 \Delta \text{ a } 160^\circ \text{ BT}$$



$$Z_x = Z \cdot \cos 20^\circ \approx 0.6 \Delta \text{ a } 180^\circ \text{ BT}$$

$$Z_y = Z \cdot \sin 20^\circ \approx 0.2 \Delta \text{ a } 90^\circ \text{ BA}$$

# ESEMPIAZIO (6)



$$\begin{cases} +4.50 \times 60^\circ \\ -2.75 \times 150^\circ \end{cases}$$

$$-2.75 + x = +4.50$$

$$x = +4.50 + 2.75 =$$

$$\begin{aligned} & -2.75 / +7.25 \times 60^\circ \\ & +4.50 / -7.25 \times 150^\circ \end{aligned}$$