MÓDULO 4 REFRAÇÃO DA LUZ

MODO TURBO | B

ESTÁ ASSOCIADA À MUDANÇA DA VELOCIDADE DEVIDO À MUDANÇA DO MEIO ÓPTICO.

$v_{VÁCUO} = c = 3 \times 10^8 \text{ m/s}$ (MÁXIMA) $\rightsquigarrow n = 1$

$v_{AR} \cong c = 3 \times 10^8 \text{ m/s} \rightsquigarrow n \cong 1$

$v_{ÁGUA} = 2{,}25 \times 10^8 \text{ m/s} \rightsquigarrow n = 1{,}33$

$v_{VIDRO} = 2 \times 10^8 \text{ m/s} \rightsquigarrow n = 1{,}5$

01. ÍNDICE DE REFRAÇÃO (n)

MODO TURBO | B

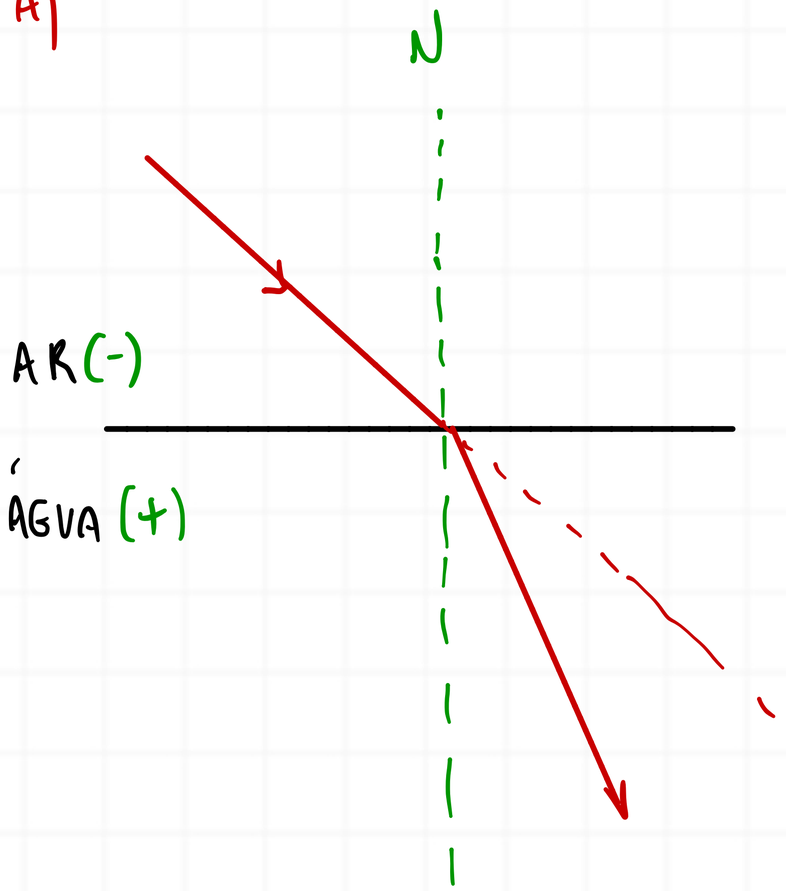
$$n = \frac{\text{VELOCIDADE DA LUZ NO VÁCUO}}{\text{VELOCIDADE DA LUZ NO MEIO}}$$

$$\uparrow n = \frac{c}{v\downarrow}$$

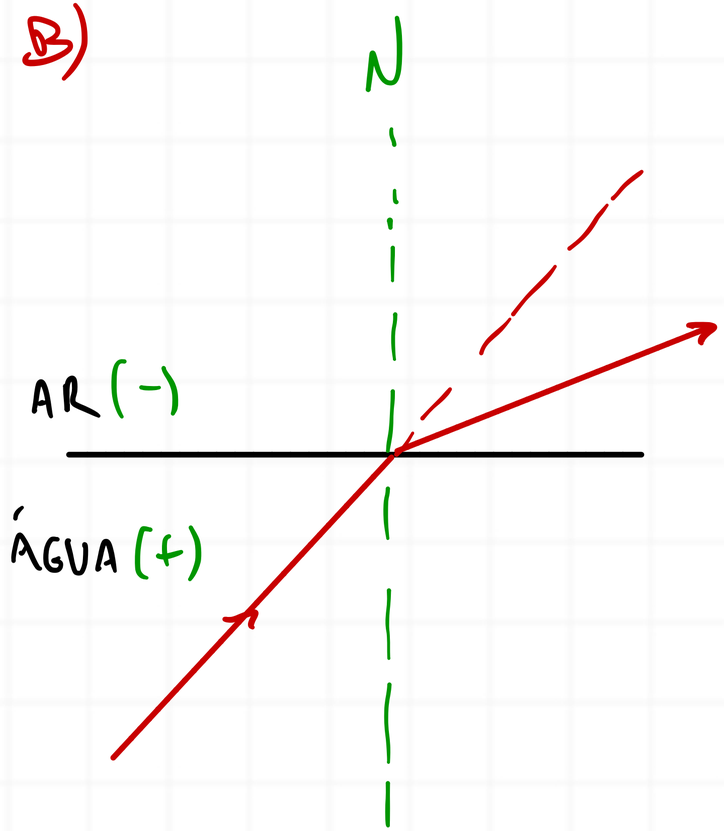
02. Comportamento do Raio de Luz

MODO TURBO | B

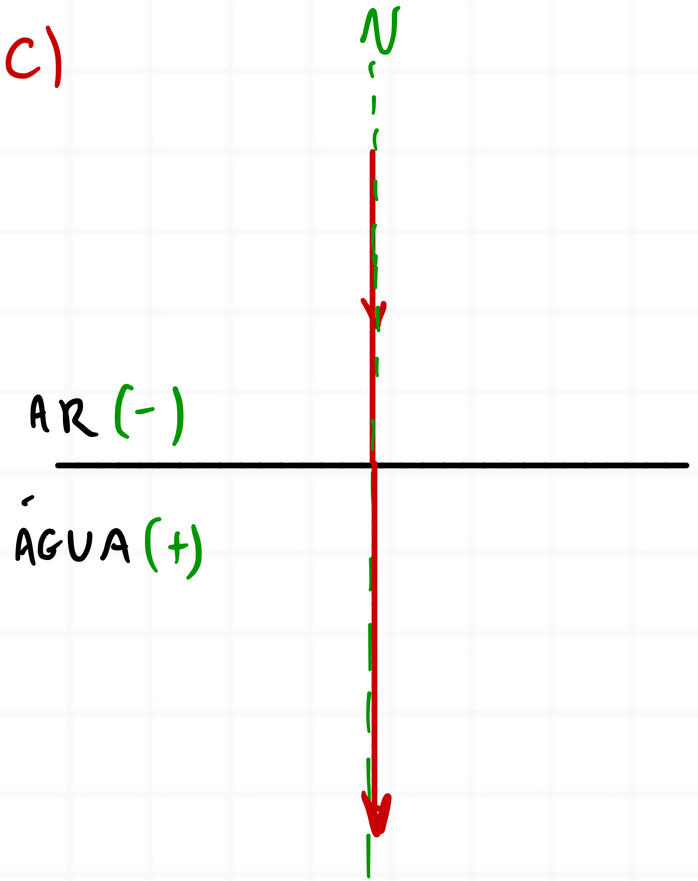
A)



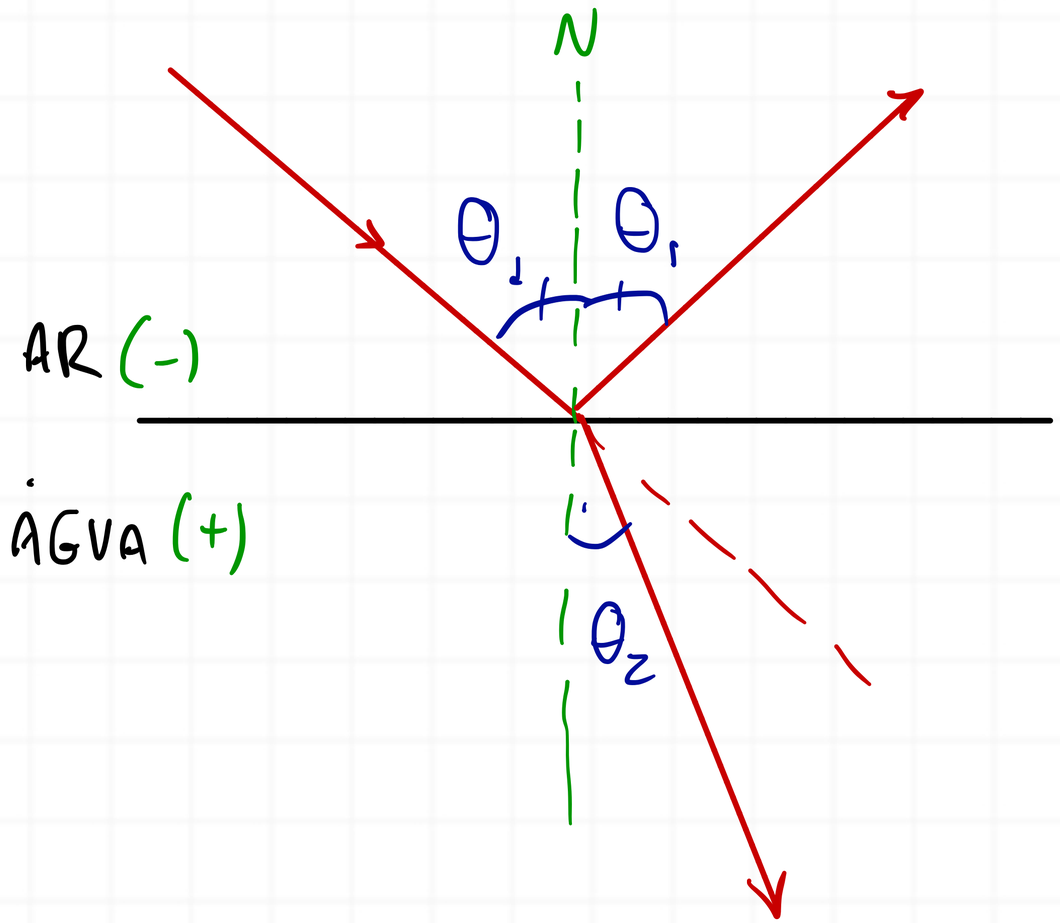
B)



C)

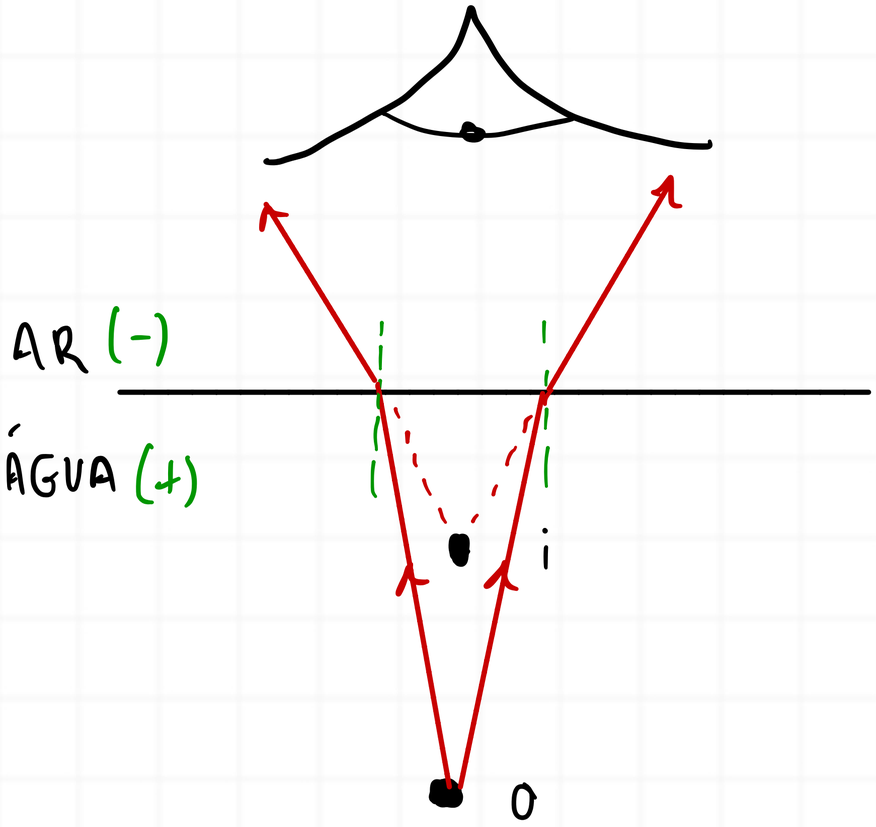


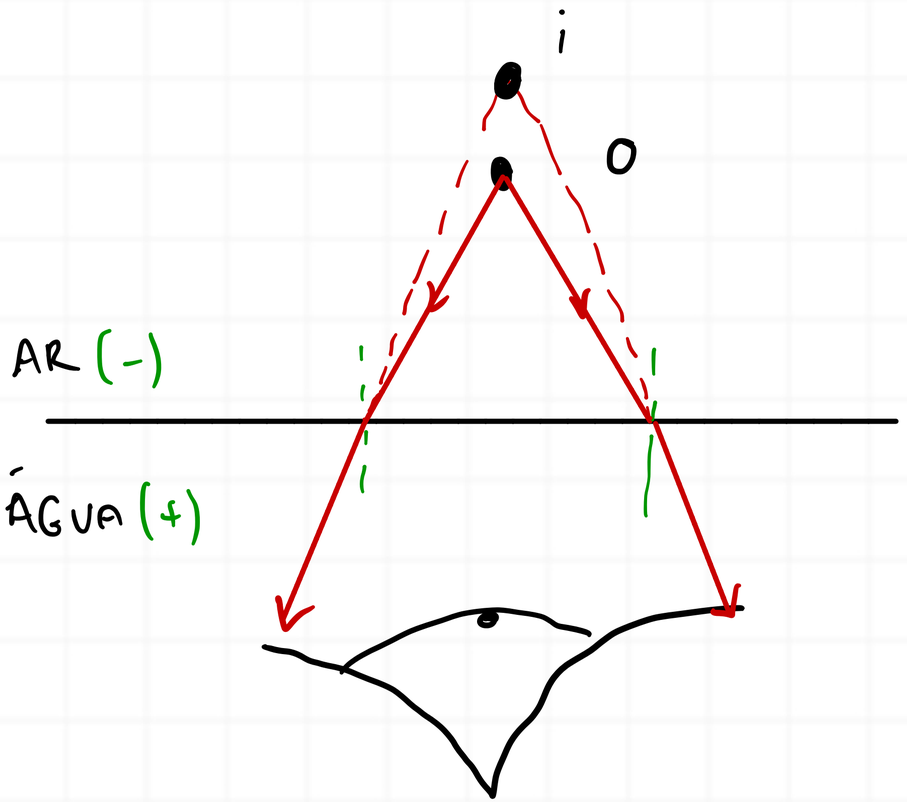
03. Lei de Snell



$$n_1 \cdot \operatorname{sen}\theta_1 = n_2 \cdot \operatorname{sen}\theta_2$$

04. Posição Aparente

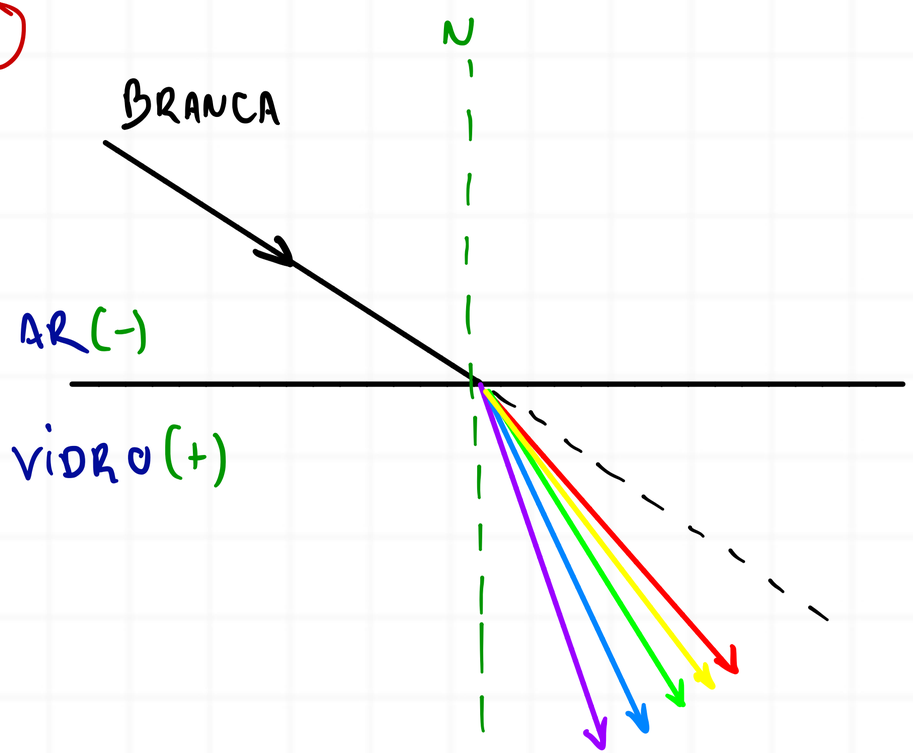




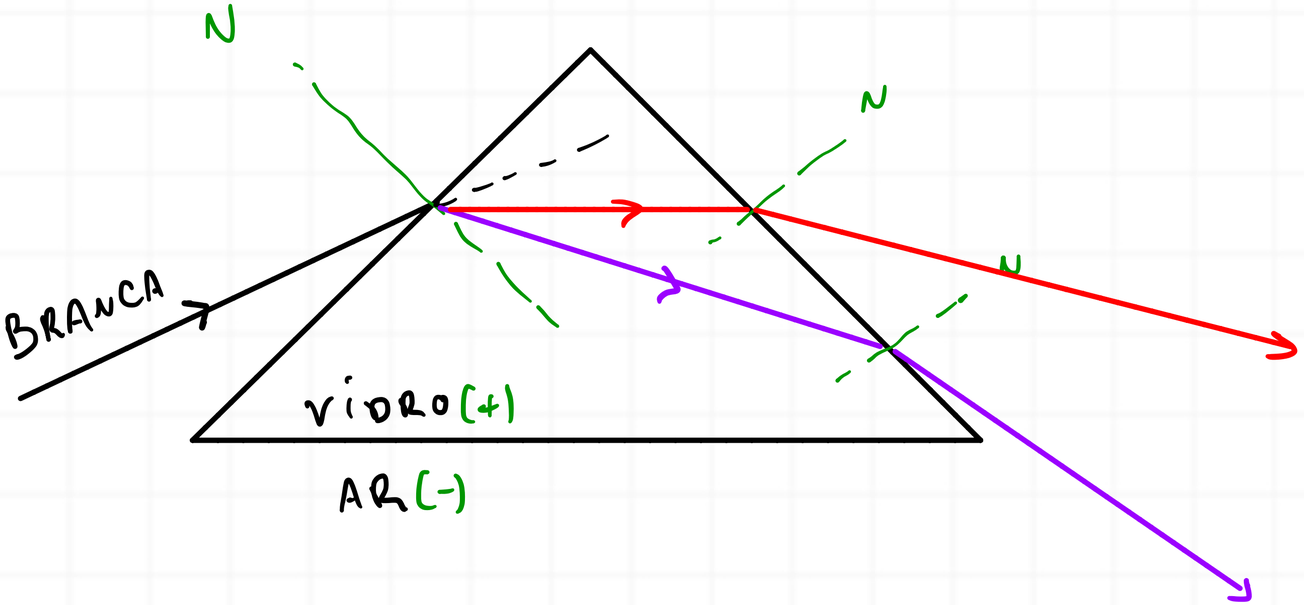
05. Dispersão da luz Branca

MODO TURBO | B

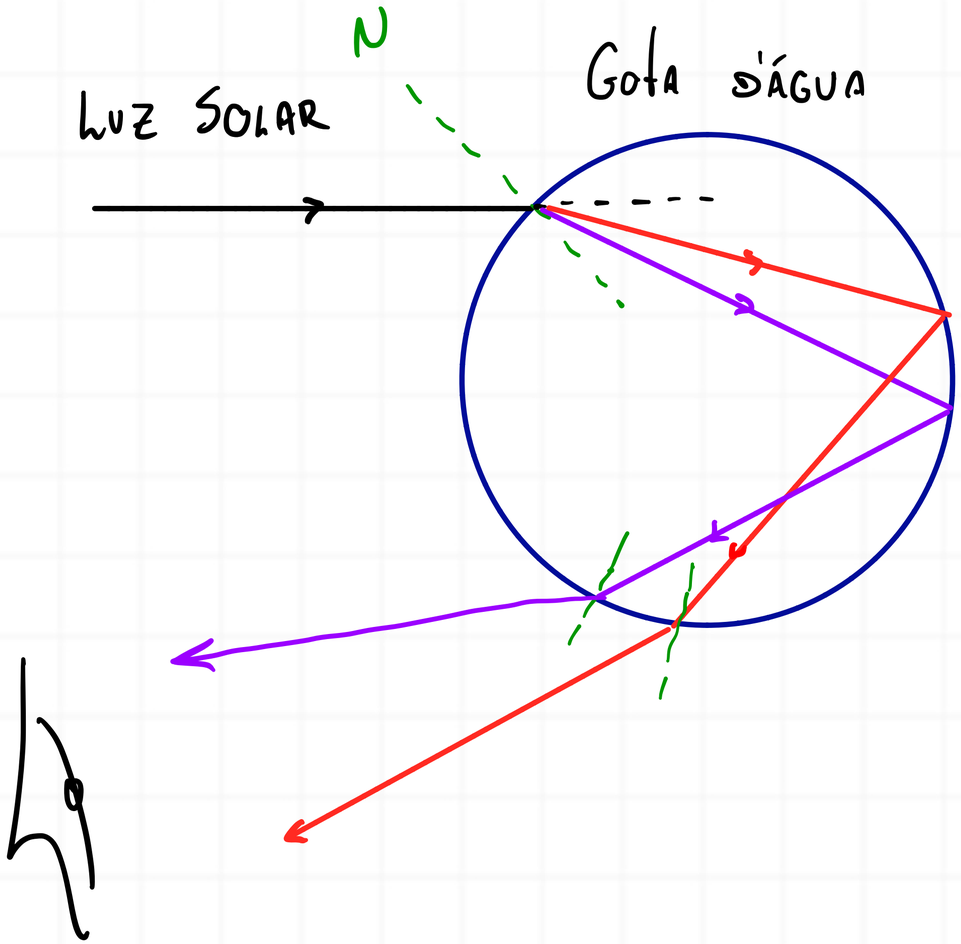
Ex. (1)

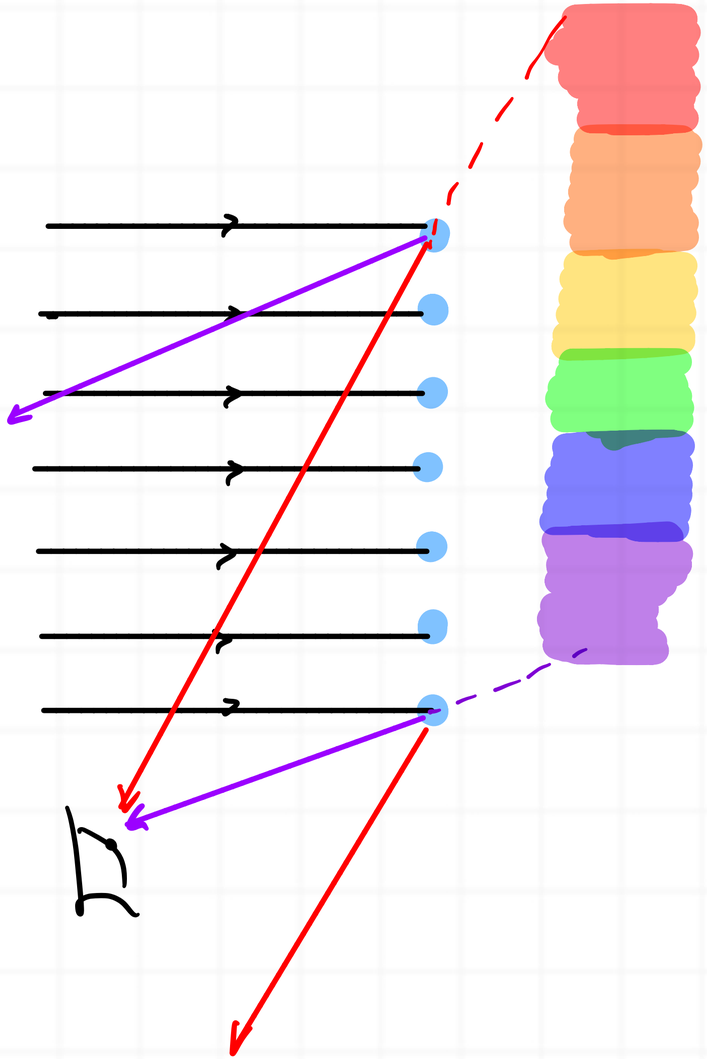


Ex. (2)



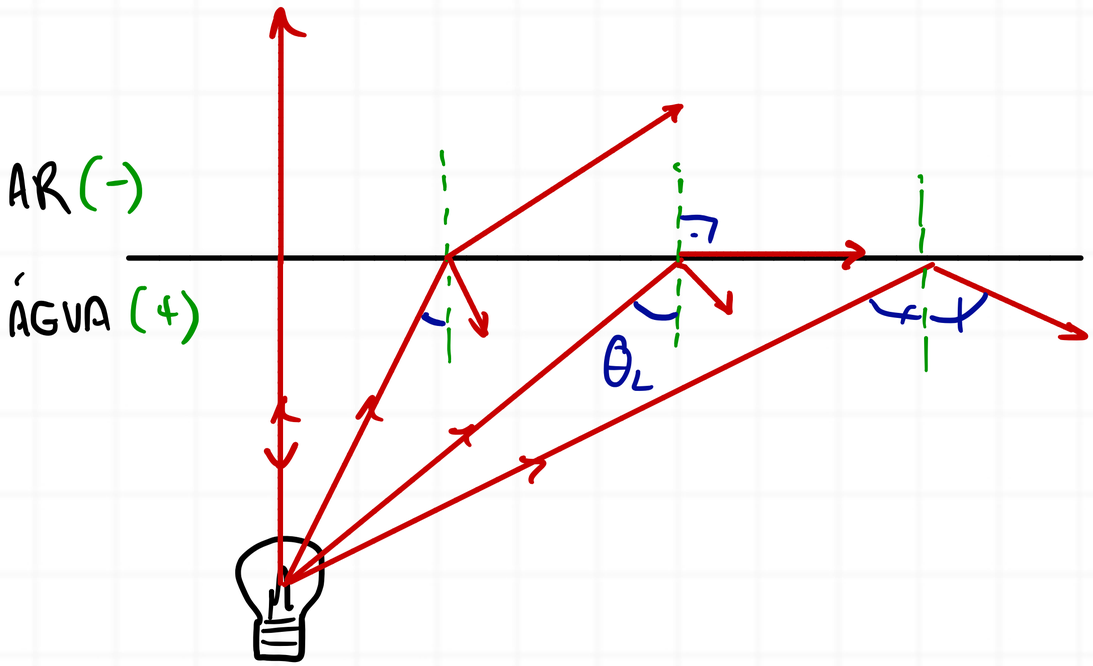
Ex. 3





06. Reflexão Total

$\theta_1 = \theta_2 = 0°$



Condições:

- ✓ (+) → (-)
- ✓ $\theta_i > \theta_L$

$$sen\theta_L = \frac{n_{menor}}{n_{maior}}$$

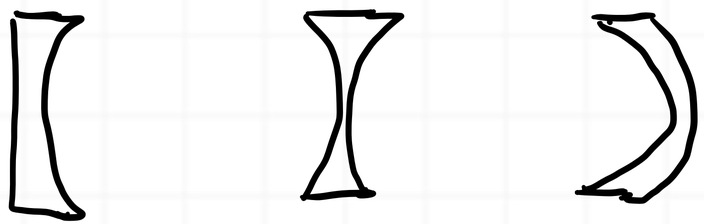
Módulo ⑤ Lentes Esféricas

MODO TURBO | B

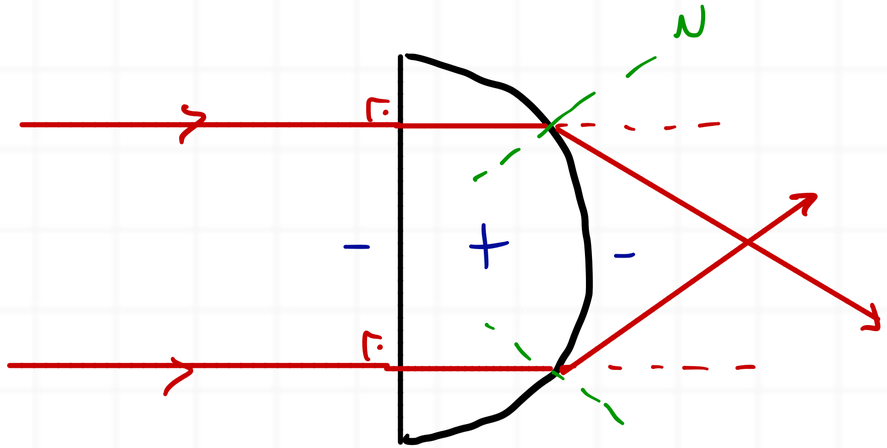
01. Classificação das lentes

A) lentes Convexas

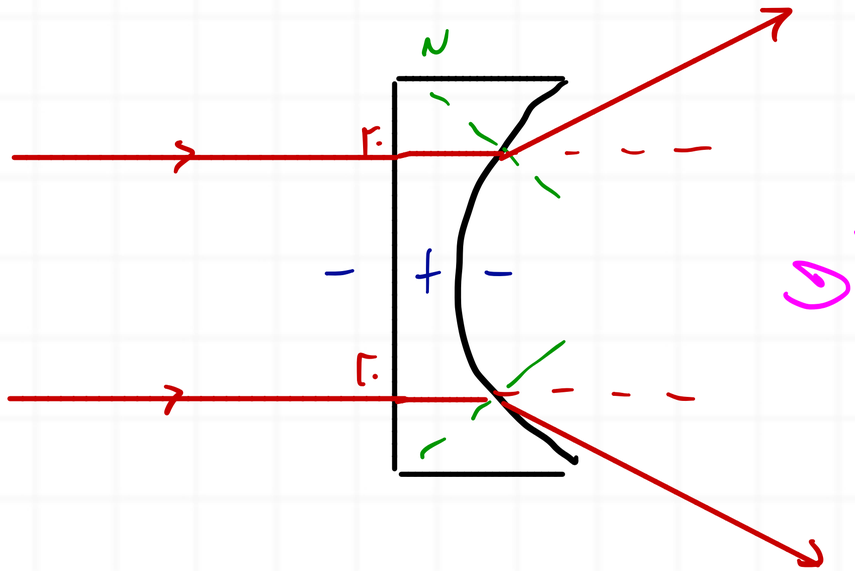
B) lentes Côncavas



02. Comportamento óptico

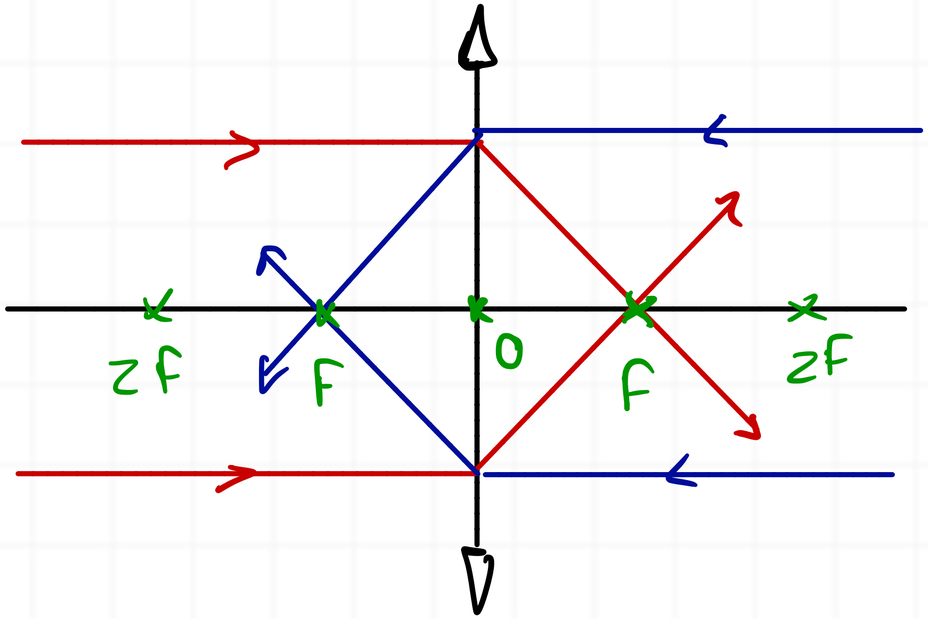


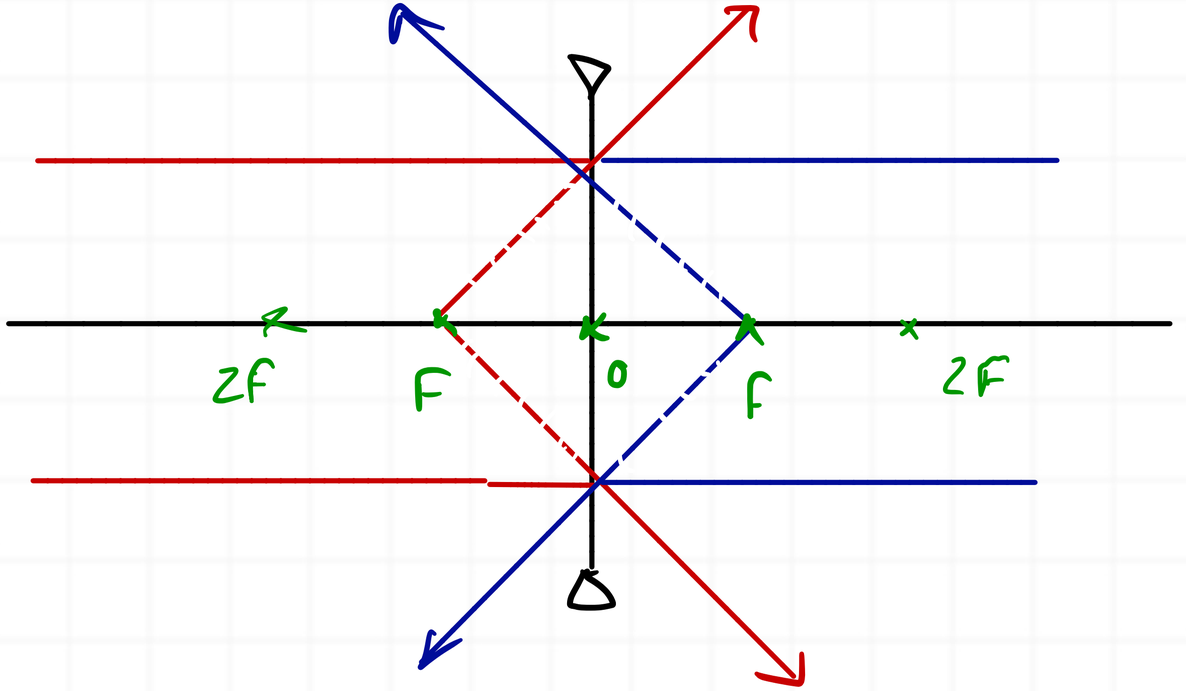
CONVERGENTE



DIVERGENTE

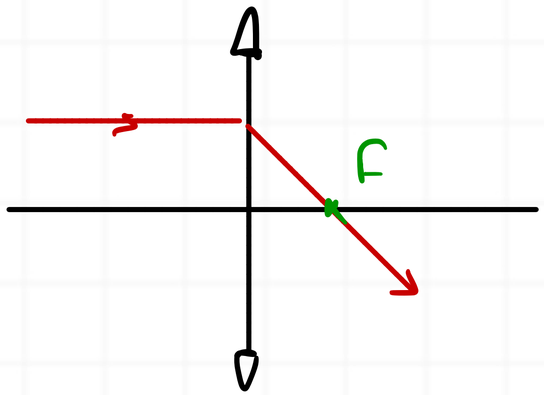
03. Elementos Principais

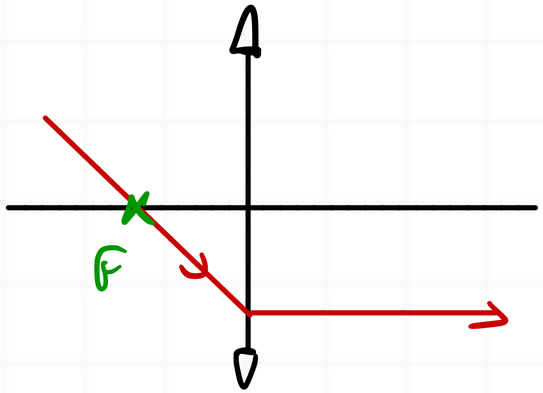


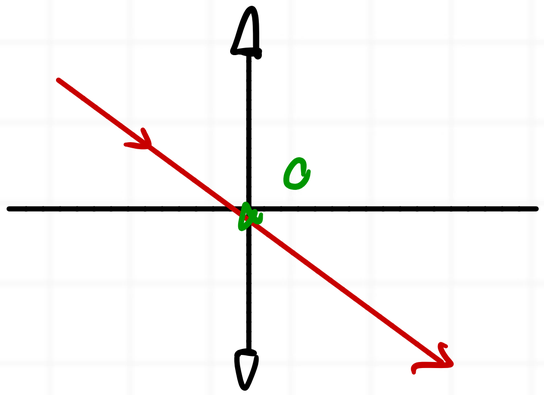


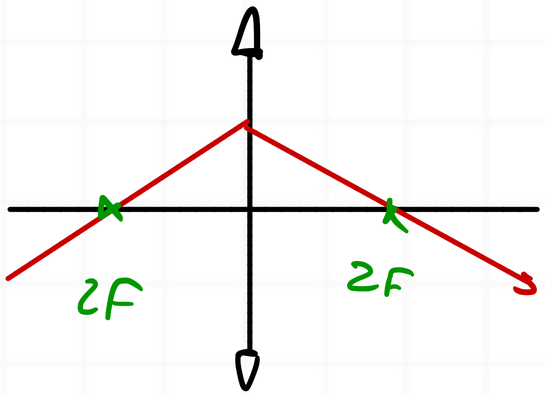
04. Raios Notáveis

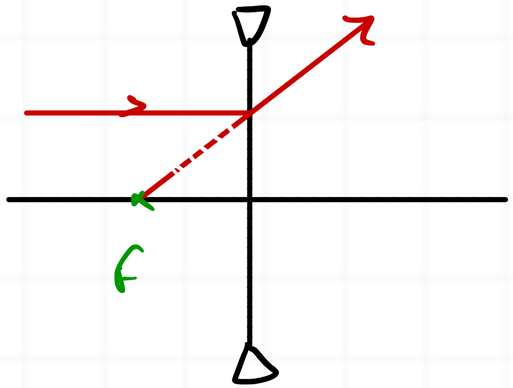
MODO TURBO | B

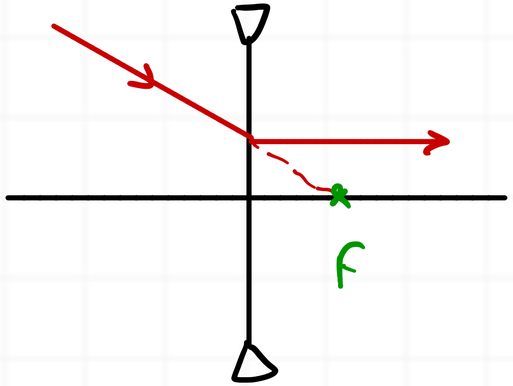


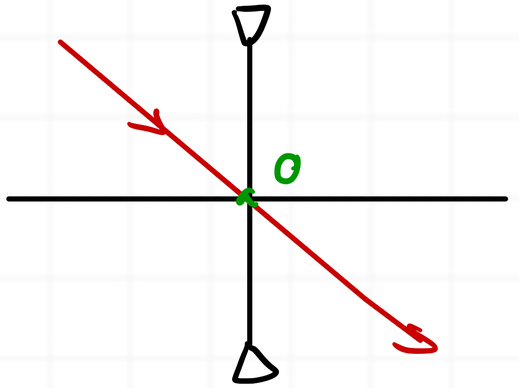


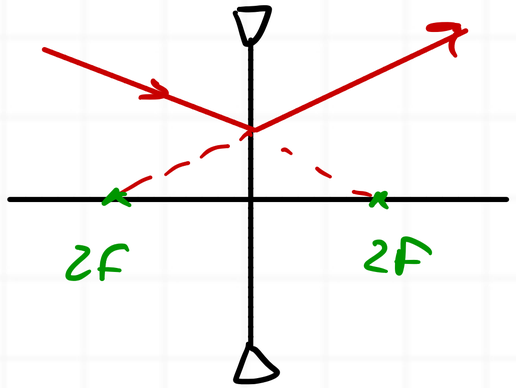






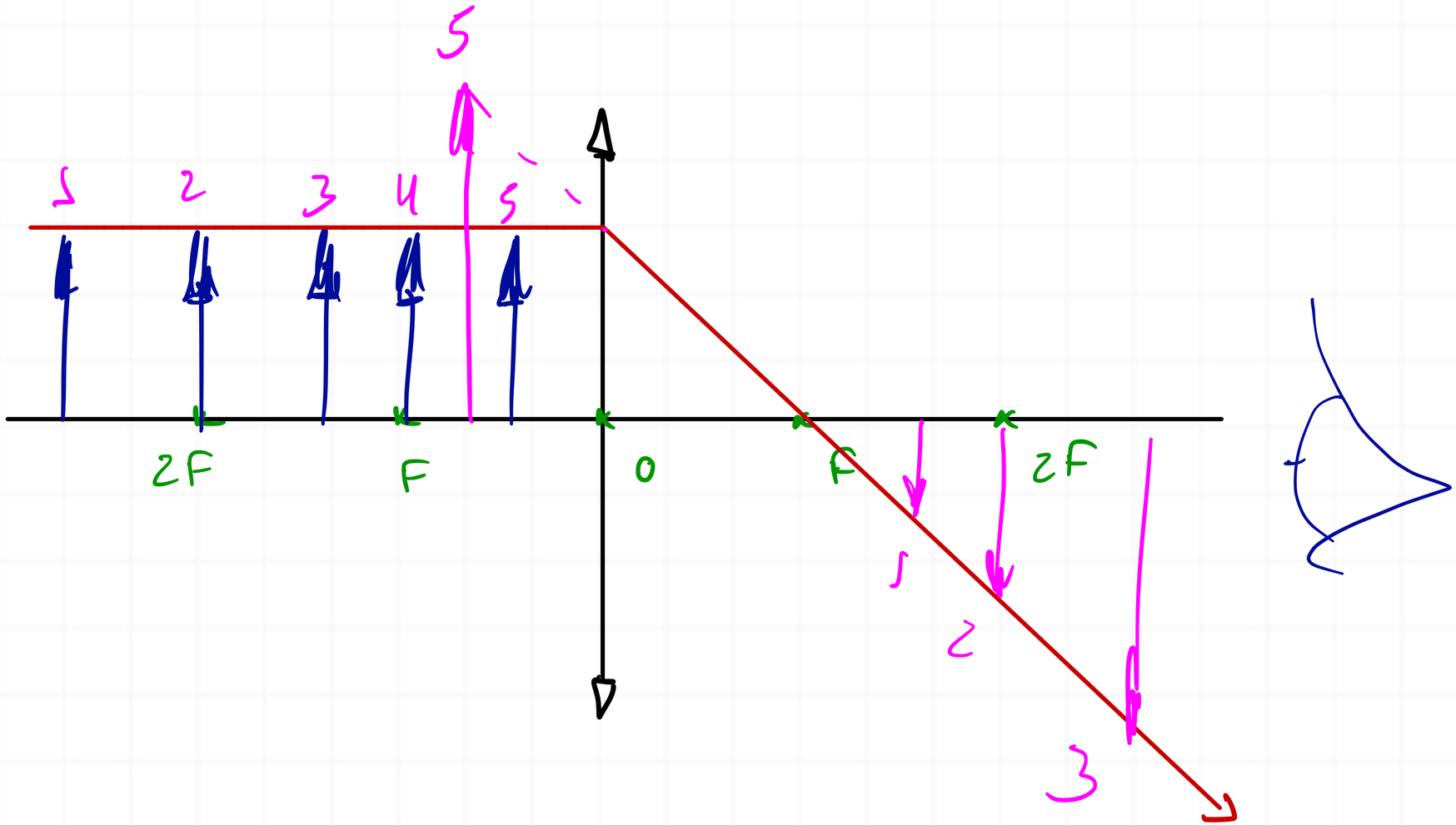




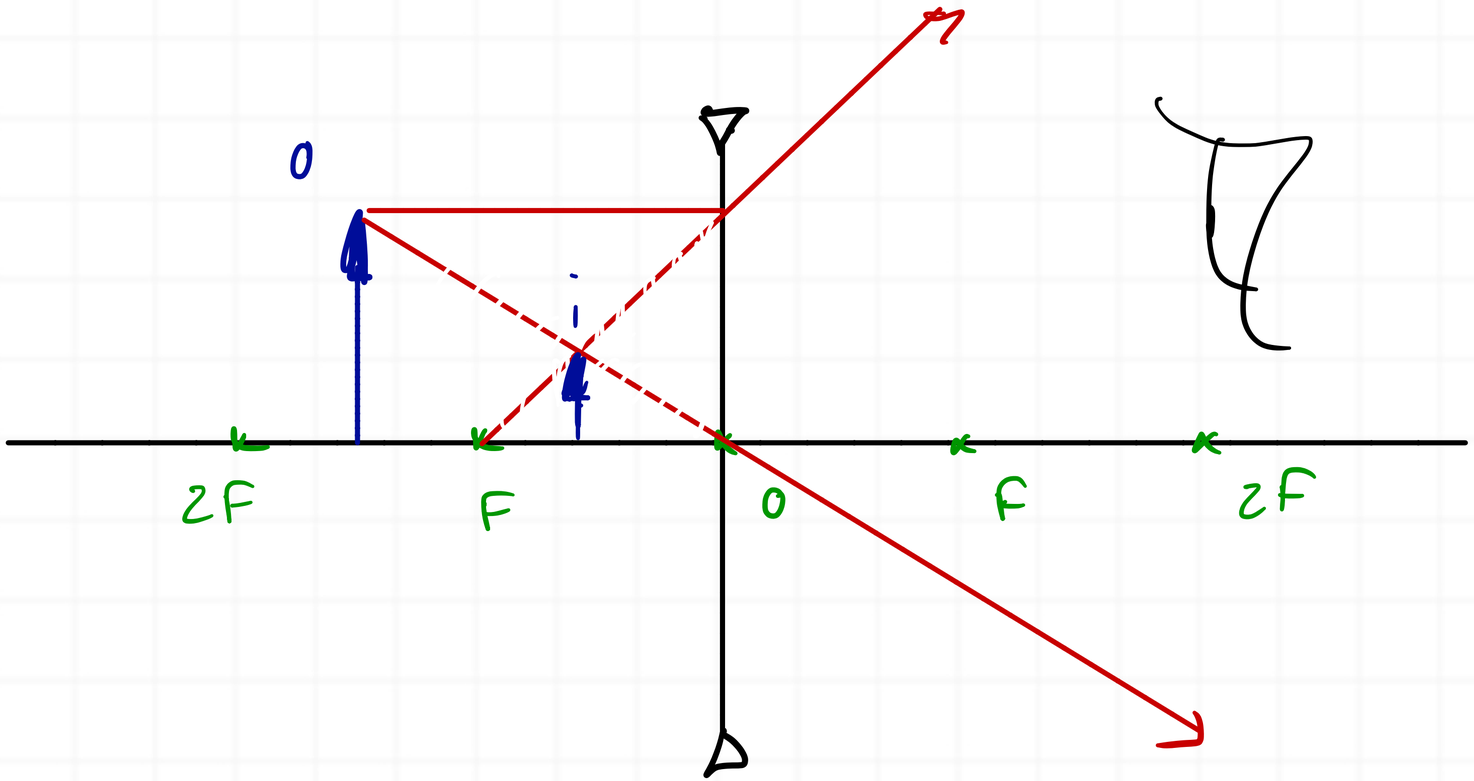


05. Formação de Imagem

Lente Convergente



Lente Divergente



06. Estudo Quantitativo

MODO TURBO | B

A) Equação de Gauss

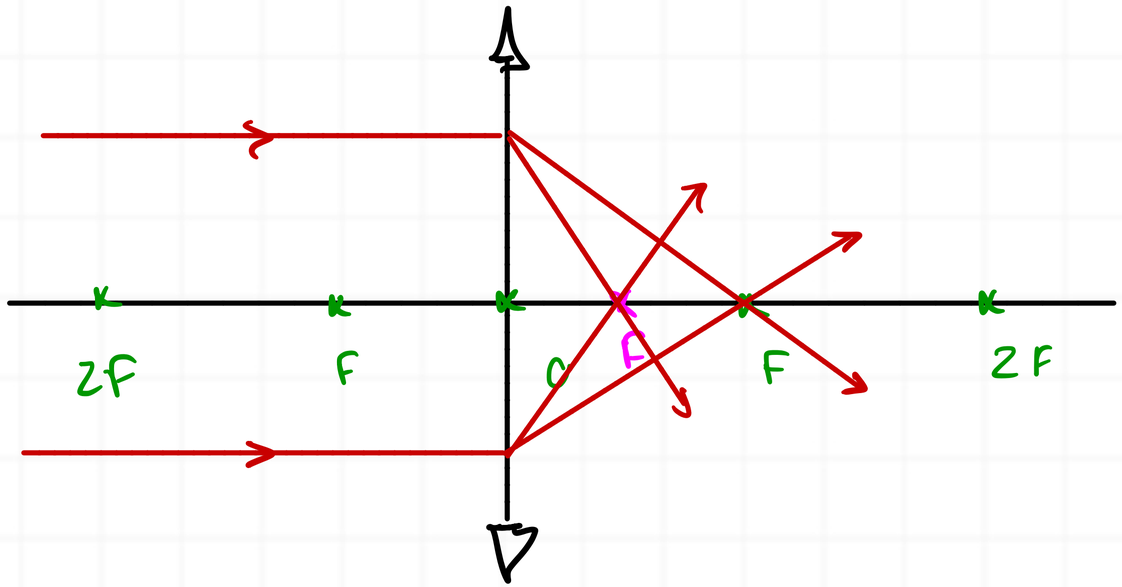
$$\frac{1}{f} = \frac{1}{D_i} + \frac{1}{D_o}$$

- (+) CONVERG.
- (−) DIVERG.

B) Equação do Aumento

$$A = \frac{h_i}{h_o} = -\frac{D_i}{D_o}$$

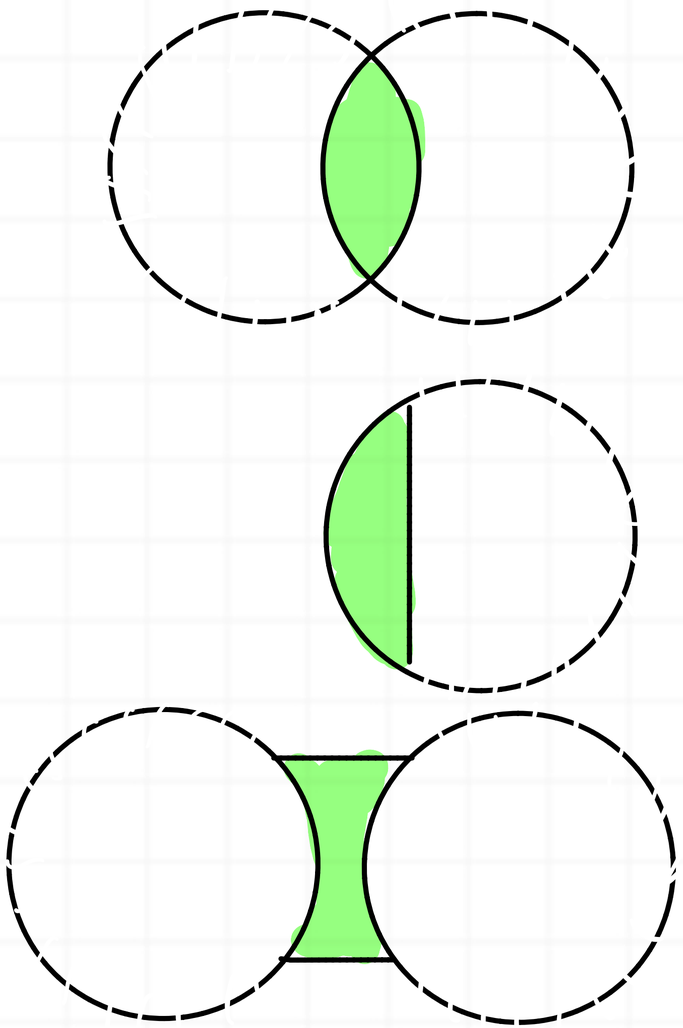
c) Vergência (V)



$$V = \frac{1}{f}$$

$$[V] = \frac{1}{m} = di \left(\begin{array}{c} \text{dioptria} \\ \text{ou} \\ \text{GRAU} \end{array} \right)$$

5) Equação dos Fabricantes de lentes



$$V = \left(\frac{n_{lente}}{n_{meio}} - 1 \right) \cdot \left(\frac{1}{R_1} + \frac{1}{R_2} \right)$$