1) $\tan i_B = n \quad \Rightarrow \quad \tan(57{,}4°) = 1{,}564$

2) $\sin i = n \sin r \quad \Rightarrow \quad \sin r = \dfrac{\sin i}{n}$

$r = \arcsin\left(\dfrac{\sin i}{n}\right) = 32{,}6°$

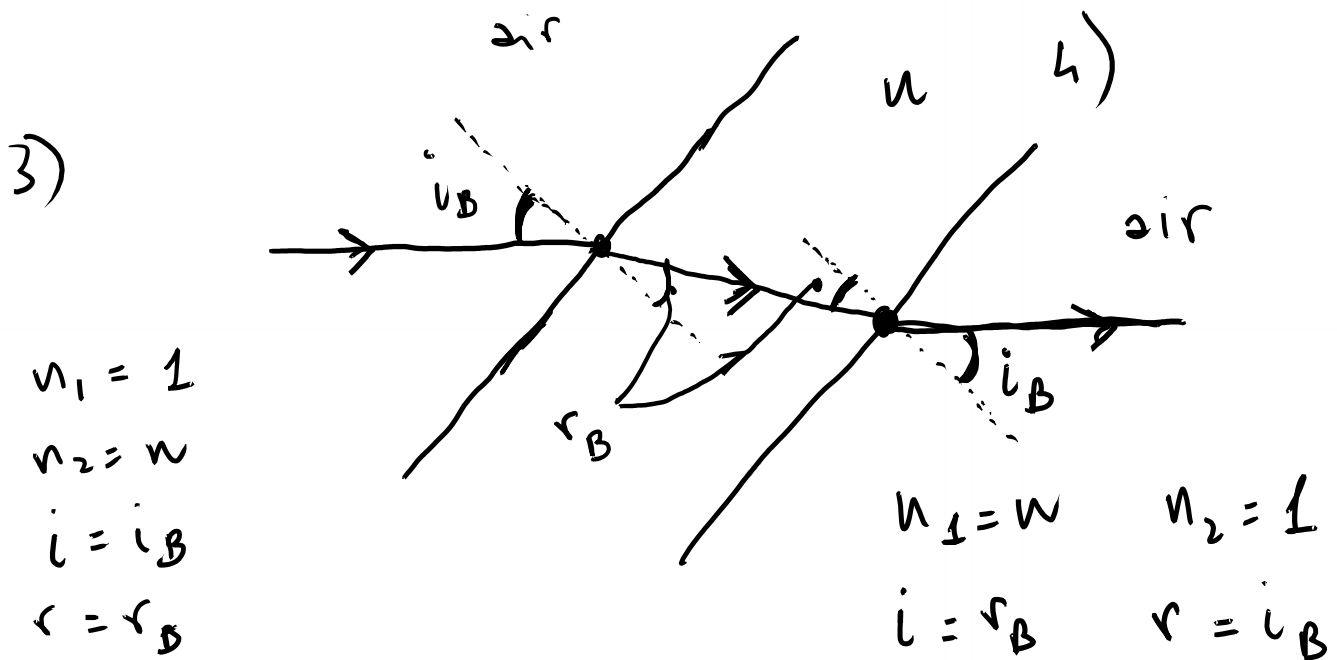**3)** $n_1 = 1 \quad n_2 = 1{,}564 \quad i = i_B \quad r_B = 32{,}6°$

$t_{1\perp} = 0{,}580 \qquad t_{1\parallel} = 0{,}639$

4)

$n_1 = 1{,}564 \qquad n_2 = 1$

$i = r_B = 32{,}6° \qquad r = i_B$

$t_{2\perp} = 1{,}419 \qquad t_{2\parallel} = 1{,}564$

air

u   **4)**

3)

air

$n_1 = 1$
$n_2 = n$
$i = i_B$
$r = r_B$

$n_1 = n \qquad n_2 = 1$
$i = r_B \qquad r = i_B$

5)

$$\frac{E_\perp^2}{E_\perp^0} = t_{1\perp} \times t_{2\perp} = 0,823$$

$$\frac{E_\parallel^2}{E_\parallel^0} = t_{1\parallel} \times t_{2\parallel} = 0,999$$

6)
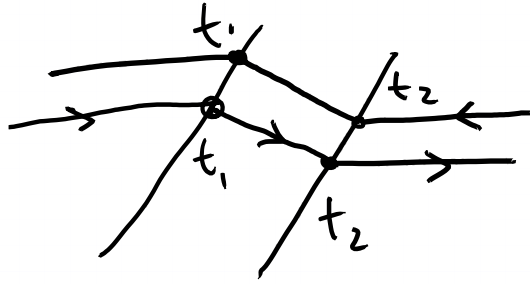
$$t_1 \times t_2 \times t_2 \times t_1 = (t_1 \times t_2)^2$$

$$\frac{E_\perp^3}{E_\perp^0} = \left(\frac{E_\perp^2}{E_\perp^0}\right)^2 = 0,68 \qquad \frac{E_\parallel^3}{E_\parallel^0} = \left(\frac{E_\parallel^2}{E_\parallel^0}\right)^2 = 0,99$$

7) perpendiculaire

parallèle

perpendiculaire

rectiligne

parallèle