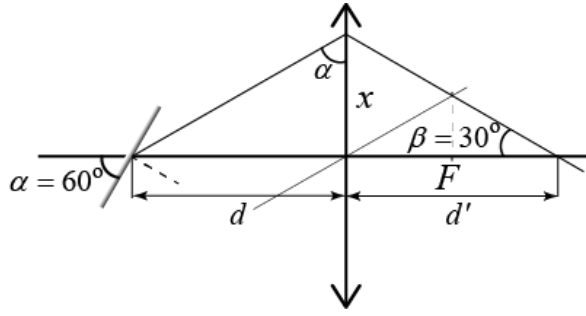


Problema 9.3

| | | |
|---------------------------------------|--|--------------------------------------|
| <p>a)</p> |  | <p align="center">2.0 p.</p> |
| <p>b)</p> | <p>Din figură</p> $x = d \operatorname{ctg} \alpha \quad (1) \quad \underline{\underline{(1.0 \text{ p.})}}$ $x = d' \operatorname{tg} \beta \quad (2) \quad \underline{\underline{(1.0 \text{ p.})}}$ $\frac{1}{d} + \frac{1}{d'} = \frac{1}{f} \quad (3) \quad \underline{\underline{(1.0 \text{ p.})}}$ <p>Din (3)</p> $\frac{1}{d'} = \frac{1}{f} - \frac{1}{d} = \frac{d-f}{fd} \Rightarrow d' = \frac{df}{f-d} \quad (4) \quad \underline{\underline{(1.0 \text{ p.})}}$ <p>Din (1), (2) și (4)</p> $d \operatorname{ctg} \alpha = \frac{df}{f-d} \operatorname{tg} \beta \Rightarrow \frac{\operatorname{ctg} \alpha}{\operatorname{tg} \beta} = \frac{f}{f-d} \quad (5) \quad \underline{\underline{(1.0 \text{ p.})}}$ <p>Convergența lentilei</p> $C = \frac{1}{f} \quad (6) \quad \underline{\underline{(1.0 \text{ p.})}}$ <p>Din (5) și (6)</p> $\frac{\operatorname{ctg} \alpha}{\operatorname{tg} \beta} = \frac{1}{\frac{d}{f}-1} = \frac{1}{Cd-1} \Rightarrow Cd-1 = \frac{\operatorname{tg} \beta}{\operatorname{ctg} \alpha} \Rightarrow$ $\Rightarrow C = \frac{1}{d} \left(1 + \frac{\operatorname{tg} \beta}{\operatorname{ctg} \alpha} \right) = \frac{1}{0,4} \left(1 + \frac{\sqrt{3}/3}{\sqrt{3}/3} \right) = 5 \delta \quad \underline{\underline{(2.0 \text{ p.})}}$ | <p align="center">8.0 p.</p> |
| <p align="right">Total max</p> | | <p align="center">10.0 p.</p> |