## **Optik**

Berechnung an einzelner spärischer Fläche

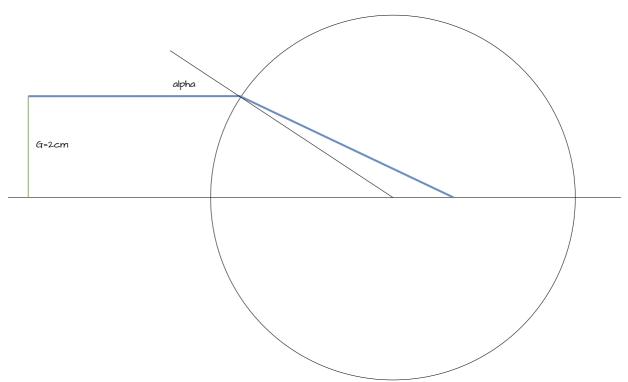


Fig. 1: Reflektierung in einem kreis

$$rac{\sin(lpha)}{\sin(eta)} = rac{n_{P_L}}{n_L}$$
  $\sin(lpha) = rac{G}{r} \implies lpha = rcsin\left(rac{2}{3.6}
ight) = 33.75^{\circ}$   $eta = rcsin\left(rac{n_L}{n_{p_L}} * \sin(lpha)
ight) = rcsin(rac{1}{1.43} * \sin(33.75^{\circ})) = 21.9^{\circ}$ 

$$egin{aligned} \gamma &= 180 - 90 - lpha = 34.25 \degree \ \delta &= 180 - 90 - \gamma - eta = 11.8 \degree \ an(\delta) &= rac{G}{x} \end{aligned}$$

Sinussatz Dreieck AFM

$$\frac{\sin(\beta)}{f-r} = \frac{\sin(180 - \alpha)}{y} = \frac{\sin(\alpha)}{y}$$

$$rac{n_{p_L}}{n_L} = rac{\sin(lpha)}{\sin(eta)} = rac{f}{f-r} \implies f * rac{n_{p_L}}{n_L} - r * rac{n_{p_L}}{n_L} = f$$

$$\frac{1}{f} = \frac{1}{b} + \frac{1}{g}$$

f...Brennweite

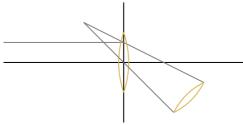


Fig. 2: drawio