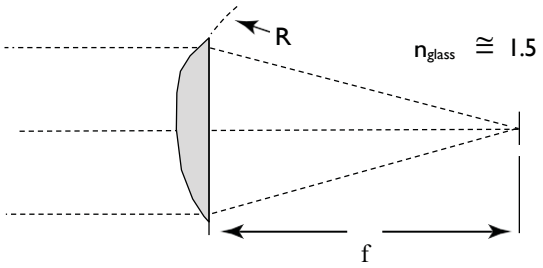
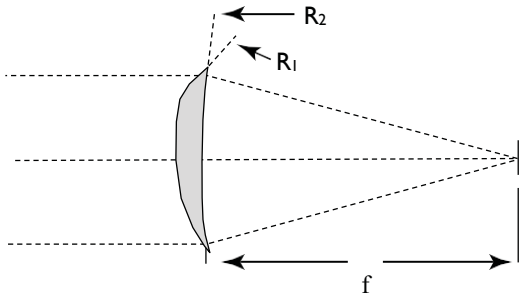
SIMPLE LENS APPROXIMATIONS



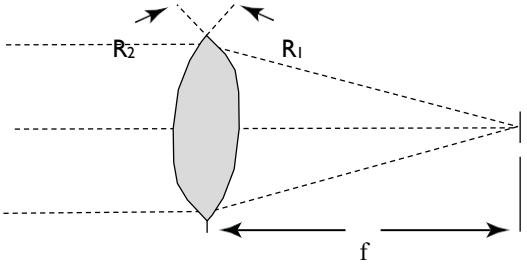
For the plano-convex lens, the focal lenth equals twice the radius of the convex surface. This is also true for the plano-concave; however, since the radius is negative, this results in a negative focal length: $f = 2R$



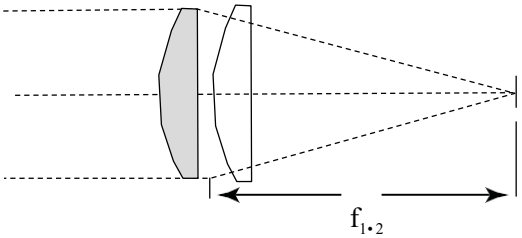
For other forms of simple lenses, the following applies

(Note: Ø = power): $\frac{1}{EFL} = Ø = \frac{1}{2}\left[\frac{1}{R_1} - \frac{1}{R_2}\right]$

Ø



For the double-convex or double-concave lens having equal radii, the focal length will equal the radius: $R_1 = R_2 = f$

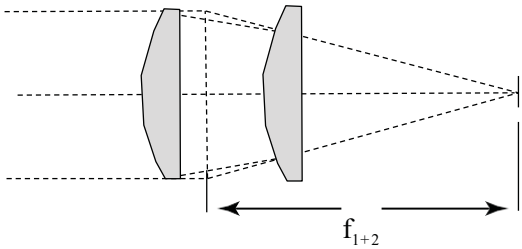


If two or more thin lenses are stacked close together, their powers (1/EFL) may be added:

$Ø_{(1+2)} = Ø_1 + Ø_2 = \frac{1}{f_{(1+2)}} = \frac{f_1 \cdot f_2}{f_1 + f_2}$

If a substantial separation"d" exists between lenses, then:

$$f_{(1+2)} = \frac{f_1 \cdot f_2}{f_1 + f_2 - d}$$



SOURCE: WALKER ASSOCIATES