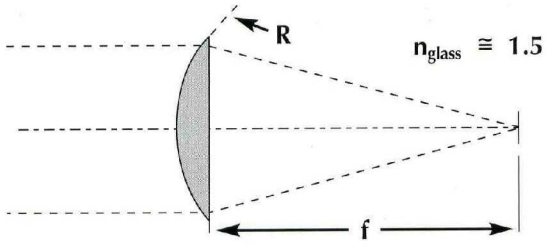
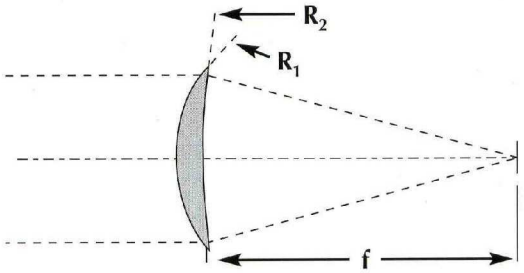
SIMPLE LENS APPROXIMATIONS

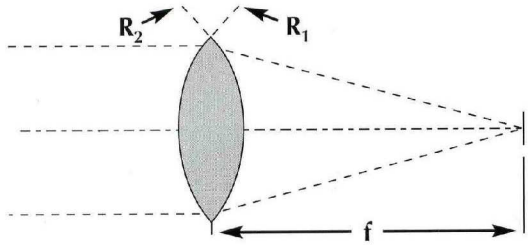


For the plano-convex lens, the focal length equals twice the radius of the convex surface. This is also true for the plano-concave; however, since the radius is negative, this results in a negative focal length: $f = 2R$

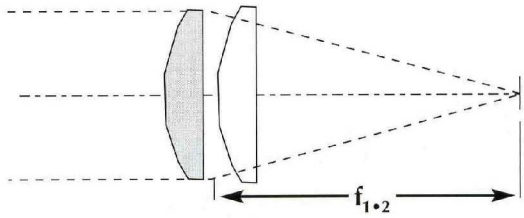


For other forms of simple lenses, the following applies (Note: Ø = power):

$$\frac{1}{EFL} = Ø = \frac{1}{2}\left[\frac{1}{R_1} - \frac{1}{R_2}\right]$$



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

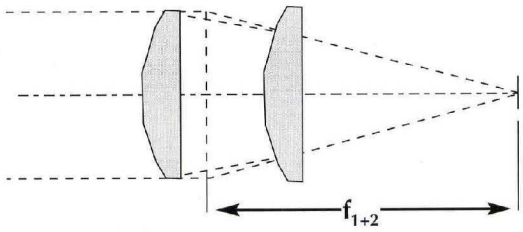


If two or more thin lenses are stacked close together, their powers (1/EFL) may be added:

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

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

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



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