Thin lens or general system $$\phi = \frac{1}{f}$$	Focal Lengths $$f'_R = n'f \qquad f_F = -nf$$
Single surface $$\phi = \frac{n' - n}{R}$$	Total power of two elements $$\phi = \phi_1 + \phi_2 - \left(\frac{t'_1}{n'_1}\right)\phi_1\phi_2$$
Front Principal Plane $$\delta = \frac{d}{n} = \frac{\phi_2}{\phi}\left(\frac{t'_1}{n'_1}\right)$$	Rear Principal Plane $$\delta' = \frac{d'}{n'} = -\frac{\phi_1}{\phi}\left(\frac{t'_1}{n'_1}\right)$$
Front Focal Distance $$FFD = f_F + d$$	Back Focal Distance $$BFD = f'_R + d'$$
Gaussian Imaging Eq. $$\frac{n'}{z'} - \frac{n}{z} = \frac{1}{f}$$	Newtonian Imaging Eq. $$z_F z'_F = f_F f'_R$$
Transverse Magnification $$m = \frac{h'}{h} = \frac{nz'}{n'z} = -\frac{z'_F}{f'_R} = -\frac{f_F}{z_F} = \frac{nu}{n'u'}$$	Longitudinal Magnification (small shift) $$\overline{m} = \frac{n'}{n}m^2$$
Nodal Points $$z_{PN} = z'_{PN} = f_F + f'_R = (n' - n)f$$	Mirrors Thickness and indices switch sign after reflection
Paraxial Refraction (Reflection) Equation $$n'_j u'_j = n_j u_j - y_j \phi_j$$	Paraxial Transfer Equation $$y_{j+1} = y_j + n'_j u'_j \frac{t'_j}{n'_j}$$