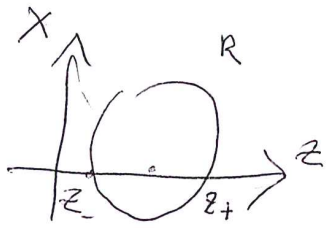
ASPHERIC

$$P z^2 - 2zR + y^2 = 0$$



$P = 1 + K$ Rezeau notation

$$z_A = \frac{2R \pm \sqrt{4R^2 - 4Py^2}}{2P} = \frac{R \pm \sqrt{R^2 - Py^2}}{P} = \frac{R - R\sqrt{1 - P\left(\frac{y}{R}\right)^2}}{P}$$

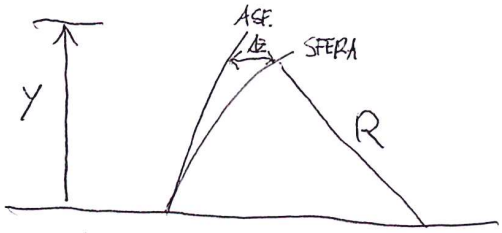
	K	P = 1+K
CIRCLE	0	1
PARAB.	-1	0
HYPER.	< -1	< 0
ELL. pro	$-1 < K < 0$	$0 < P < 1$
ELL. obl	> 0	> 1

$$= \frac{R}{P}\left[1 - \sqrt{1 - P\left(\frac{y}{R}\right)^2}\right]$$

$$= \frac{R}{P}\left\{1 - \left[1 - \frac{P}{2}\left(\frac{y}{R}\right)^2 - \frac{P^2}{8}\left(\frac{y}{R}\right)^4 - \dots\right]\right\} =$$

$$= \frac{y^2}{2R} + \frac{P}{8}\frac{y^4}{R^3} + \frac{P^2}{16}\frac{y^6}{R^5} + \dots$$

$$z_S = \frac{y^2}{2R} + \frac{1}{8}\frac{y^4}{R^3} + \frac{1}{16}\frac{y^6}{R^5} + \dots$$



$$\Delta_z = z_A - z_S = \frac{1}{8}(P-1)\frac{y^4}{R^3} + \frac{1}{16}(P^2-1)\frac{y^6}{R^5} + \dots$$