



$$z^2 = R^2 + \Delta^2 - 2R\Delta \sin \alpha$$

$$z = \sqrt{R^2 + \Delta^2 - 2R\Delta \sin \alpha}$$

$$z = R \sqrt{1 + \delta^2 - 2\delta \sin \alpha}$$

$$\approx R \left( 1 + \frac{\delta^2}{2} - \delta \sin \alpha \right)$$

$$\approx R - \Delta \sin \alpha$$