$$A_{\rm tot} = A\left[\frac{\sin(N\phi/2)}{\sin(\phi/2)}\right]$$

$$L = R\,\sin\left(\frac{\alpha}{2}\right)$$

$$A_{\rm tot} = 2L = 2R\,\sin\left(\frac{\alpha}{2}\right)$$

$$M = R\,\sin\left(\frac{\phi}{2}\right)$$

$$A = 2M = 2R\,\sin\left(\frac{\phi}{2}\right)$$

$$\frac{A_{\rm tot}}{A} = \frac{2R\,\sin\left(\frac{\alpha}{2}\right)}{2R\,\sin\left(\frac{\phi}{2}\right)}$$

$$\alpha = N\,\phi$$

$$\frac{A_{\rm tot}}{A} = \frac{2R\,\sin\left(\frac{N\phi}{2}\right)}{2R\,\sin\left(\frac{\phi}{2}\right)}$$

$$A_{\rm tot} = A\left[\frac{\sin\left(\frac{N\phi}{2}\right)}{\sin\left(\frac{\phi}{2}\right)}\right]$$