

$$\sum_{i=1}^n \frac{\lambda}{\sqrt{i\lambda^2 + H}} \tag{1}$$

$$= \lambda \frac{1}{\lambda^2} \int_{\lambda^2}^{n\lambda^2} \frac{dx}{\sqrt{x + H}} \tag{2}$$

$$= \frac{2}{\lambda} (\sqrt{n\lambda^2 + H} - \sqrt{\lambda^2 + H}) \tag{3}$$