

$$ln[\#]:= \left( \star \mathbf{A} = \frac{\sqrt{\left( (2\lambda_D \star \sigma)^2 + (\omega \star \epsilon \star \mathbf{Pi})^2 + x_{\min} \star x_{\max} \right)^2 + (2\lambda_D \star \sigma \star \omega \star \epsilon \star \mathbf{Pi} (x_{\max} - x_{\min}))^2}}{(2\lambda_D \star \sigma)^2 + (\omega \star \epsilon \star \mathbf{Pi} \star x_{\min})^2} ; \star \right)$$

$$\mathbf{A} = \frac{\left( 2 \lambda_D \star \sigma \right)^2 + \left( \omega \star \epsilon \star \mathbf{Pi} \star x_{\max} \right)^2}{\left( 2 \lambda_D \star \sigma \right)^2 + \left( \omega \star \epsilon \star \mathbf{Pi} \star x_{\min} \right)^2} ;$$

$$\theta = \text{ArcTan} \left[ \frac{2 \lambda_D \star \sigma \star \omega \star \epsilon \star \mathbf{Pi} (x_{\max} - x_{\min})}{\left( 2 \lambda_D \star \sigma \right)^2 + \left( \omega \star \epsilon \star \mathbf{Pi} \right)^2 x_{\min} \star x_{\max}} \right] ;$$

⌈反正切

$$\mathbf{Z_0} = \frac{\mathbf{Pi} \left( \sqrt{k} + \frac{1}{\sqrt{k}} \right)}{1 \star \sigma \star \left( \text{Log}[\mathbf{A}] + 2 \mathbf{I} \star \theta \right)}$$

$$Out[\#]= \frac{\left( \frac{1}{\sqrt{k}} + \sqrt{k} \right) \pi}{1 \, \sigma \left( 2 \, \Im \, \text{ArcTan} \left[ \frac{2 \, \pi \, \epsilon \, \sigma \, \omega \, (x_{\max} - x_{\min}) \, \lambda_D}{\pi^2 \, \epsilon^2 \, \omega^2 \, x_{\max} \, x_{\min} + 4 \, \sigma^2 \, \lambda_D^2} \right] + \text{Log} \left[ \frac{\pi^2 \, \epsilon^2 \, \omega^2 \, x_{\max}^2 + 4 \, \sigma^2 \, \lambda_D^2}{\pi^2 \, \epsilon^2 \, \omega^2 \, x_{\min}^2 + 4 \, \sigma^2 \, \lambda_D^2} \right] \right)}$$

$$ln[\#]:= \mathbf{Z} = \frac{1}{\int_{x_{\min}}^{x_{\max}} \frac{2 \, \sqrt{k} \, \epsilon \, \sigma \, \omega}{(1+k) \, (\pi \, x \, \epsilon \, \omega - 2 \, \Im \, \sigma \, \lambda_D)} \, \mathrm{d} x}$$

$$Out[\#]= \left( \left( (1+k) \, \pi \right) \, \Bigg/ \right. \\ \left. \left( \sqrt{k} \, \sigma \left( 2 \, \Im \, \text{ArcTan} \left[ \frac{\pi \, \epsilon \, \omega \, x_{\max}}{2 \, \sigma \, \lambda_D} \right] - 2 \, \Im \, \text{ArcTan} \left[ \frac{\pi \, \epsilon \, \omega \, x_{\min}}{2 \, \sigma \, \lambda_D} \right] + \text{Log} \left[ \pi^2 \, \epsilon^2 \, \omega^2 \, x_{\max}^2 + 4 \, \sigma^2 \, \lambda_D^2 \right] - \right. \right. \right. \\ \left. \left. \left. \text{Log} \left[ \pi^2 \, \epsilon^2 \, \omega^2 \, x_{\min}^2 + 4 \, \sigma^2 \, \lambda_D^2 \right] \right) \right) \right) \text{ if } \boxed{\text{condition} \, \oplus}$$