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

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

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

$$Zo = \frac{Pi\left(\sqrt{k} + \frac{1}{\sqrt{k}}\right)}{1 * \sigma * \left(Log[A] + 2I * \theta\right)}$$

$$\left(\frac{1}{\sqrt{k}} + \sqrt{k}\right) \pi$$

$$\text{Out[*]=} \ \frac{\left(\frac{1}{\sqrt{K}} + \sqrt{k}\right) \, \pi}{ 1 \, \sigma \, \left(2 \, \, \dot{\mathbb{1}} \, \operatorname{ArcTan} \left[\, \frac{2 \, \pi \, \epsilon \, \sigma \, \omega \, \left(x_{\text{max}} - x_{\text{min}}\right) \, \lambda_{\text{D}}}{\pi^2 \, \epsilon^2 \, \omega^2 \, x_{\text{max}} \, x_{\text{min}} + 4 \, \sigma^2 \, \lambda_{\text{D}}^2} \, \right] + \text{Log} \left[\, \frac{\pi^2 \, \epsilon^2 \, \omega^2 \, x_{\text{max}}^2 + 4 \, \sigma^2 \, \lambda_{\text{D}}^2}{\pi^2 \, \epsilon^2 \, \omega^2 \, x_{\text{min}}^2 + 4 \, \sigma^2 \, \lambda_{\text{D}}^2} \, \right] \right) }$$

$$\label{eq:local_local_local_local} \ln[\ \ \] := \ \ Z = \frac{1}{\int_{x_{min}}^{x_{max}} \frac{2 \ \sqrt{k} \ \epsilon \ \sigma \omega}{(1+k) \ (\pi \ x \ \epsilon \ \omega - 2 \ \hat{\textbf{1}} \ \sigma \ \lambda_D)} \ d \ x}$$

$$\begin{array}{c|c} \text{Out} [=] = & \left(\left. \left(1 + \mathsf{k} \right) \; \pi \right) \middle/ \\ & \left(\sqrt{\mathsf{k}} \; \sigma \left(2 \; \text{i} \; \mathsf{ArcTan} \left[\frac{\pi \in \omega \; \mathsf{x}_{\mathsf{max}}}{2 \; \sigma \; \lambda_{\mathsf{D}}} \right] - 2 \; \text{i} \; \mathsf{ArcTan} \left[\frac{\pi \in \omega \; \mathsf{x}_{\mathsf{min}}}{2 \; \sigma \; \lambda_{\mathsf{D}}} \right] + \mathsf{Log} \left[\pi^2 \in ^2 \omega^2 \; \mathsf{x}_{\mathsf{max}}^2 + 4 \; \sigma^2 \; \lambda_{\mathsf{D}}^2 \right] - \mathsf{Log} \left[\pi^2 \in ^2 \omega^2 \; \mathsf{x}_{\mathsf{min}}^2 + 4 \; \sigma^2 \; \lambda_{\mathsf{D}}^2 \right] \right) \\ & \mathsf{Log} \left[\pi^2 \in ^2 \omega^2 \; \mathsf{x}_{\mathsf{min}}^2 + 4 \; \sigma^2 \; \lambda_{\mathsf{D}}^2 \right] \right) \quad \text{if} \quad \begin{array}{c} \mathsf{condition} \; | \\ \mathsf{condition} \; | \\ \mathsf{e} \end{array} \right]$$