

$$\begin{bmatrix} x = \ln |w|, \\ y = \operatorname{Arg} w, \end{bmatrix} \underbrace{z = Lnw}_{w = e^{z}} \begin{bmatrix} |w| = e^{x}, \\ \arg w = y, (-\pi < y \le \pi) \end{bmatrix}$$