

$$\begin{pmatrix} -1 & 0 \\ 0 & -1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} -2^{-m} & -2 \operatorname{Sinh}[m \operatorname{Log}[2]] \\ -2^{-m} & 2^{-m} \end{pmatrix}$$

$$\begin{pmatrix} 2^{-m} & 2 \operatorname{Sinh}[m \operatorname{Log}[2]] \\ 2^{-m} & -2^{-m} \end{pmatrix}$$