

$$\begin{aligned}
\sinh(\pi + i) &= \left\{ \sinh z = \frac{e^{iz} - e^{-iz}}{2i} \right\} = \dots \\
&= \frac{e^{i(\pi+i)} - e^{-i(\pi+i)}}{2i} = \frac{e^{-1+i\pi} - e^{1-i\pi}}{2i} = \\
&= \frac{e^{-1}(\cos\pi + i\sin\pi) - e^1(\cos\pi - i\sin\pi)}{2i} = \\
&= \frac{e^{-1}(-1 + 0i) - e^1(-1 - 0i)}{2i} = \frac{-e^{-1} + e^1}{2i} = \\
&= \frac{i(e^{-1} - e^1)}{2} = \left\{ \sinh = \frac{e^x - e^{-x}}{2} \right\} = \\
&= -i \left(\frac{e^1 - e^{-1}}{2} \right) = -i \sinh 1
\end{aligned}$$