$$
\begin{aligned}
e^{i\phi} &= \cos\phi + i\sin\phi && \text{\# Euler's Formula} \\
\Rightarrow\ & e^{i\pi} = \cos\pi + i\sin\pi && \text{\# set } \phi = \pi \\
\Rightarrow\ & e^{i\pi} = -1 + i\cdot 0 && \text{\# } \cos\pi = -1 \text{ and } \sin\pi = 0 \\
\Rightarrow\ & e^{i\pi} = -1 + 0 && \text{\# } i\cdot 0 = 0 \\
\Rightarrow\ & e^{i\pi} = -1 && \text{\# simplify} \\
\Rightarrow\ & e^{i\pi} + 1 = 0 && \text{\# Euler's Identity}
\end{aligned}
$$