Problem 7: Find the sum of the $n^{\text{th}}$ roots of unity. (Source: AoPS Precalculus)

We can sum the $n^{\text{th}}$ roots of unity using the sigma operator.

$$\begin{aligned}
\sum_{k=0}^{n-1} e^{2\pi ik/n} &= \sum_{k=0}^{n-1} (e^{2\pi i/n})^k && \text{notice that this is a geometric series} \\
&= \frac{(e^{2\pi i/n})^n - 1}{e^{2\pi i/n} - 1} && \text{we apply the formula for the sum of a geometric series} \\
&= \frac{e^{2\pi i} - 1}{e^{2\pi i/n} - 1} \\
&= \frac{1 - 1}{e^{2\pi i/n} - 1} \\
&= \boxed{0}
\end{aligned}$$

So the sum of the $n^{\text{th}}$ roots of unity is $\boxed{0}$.