Study break challenge: For $N$-slit interference (where $N = 2, 3, \ldots$) we know that there is a central maximum at $\Delta \phi_{\text{adj}} = 0$, and that the first major side maximum occurs at $\Delta \phi_{\text{adj}} = 2\pi$. From lab we know that in between these there are $N - 2$ sub maximums. Equivalently, there are $N - 1$ minima between the central max and the first major side max.

Show that these minima occur at the values

$$
\Delta \phi_{\text{adj}} = 2\pi \frac{m}{N} \quad \text{for} \quad m = 1, \ldots, N - 1.
$$

That is, show that the minima are equally spaced in $\Delta \phi_{\text{adj}}$. Hint: The phasor diagrams get pretty complicated for $N > 5$ or so. But represent the phasor by a complex number $z = Ae^{i\phi}$ and then you can do vector addition simply by summing the complex numbers.