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Littlewood's 22nd Problem

Littlewood, in his 1968 monograph "Some Problems in Real and Complex Analysis", poses the following research problem, which appears to still be open:

"If the n_m are integral and all different, what is the lower bound on the number of real zeros of

$$\sum_{m=1}^{N} \cos(n_m \theta)?$$

Possibly $N - 1$, or not much less."

No progress appears to have been made on this in the last half century. Until now!