Let θ be a positive real number and let $\cosh t = \frac{\mathrm{e}^t + \mathrm{e}^{-t}}{2}$ denote the hyperbolic cosine. Show that if $k \in \mathbb{N}$ and both $\cosh k\theta$ and $\cosh(k+1)\theta$ are rational, then so is $\cosh \theta$.