Construct an entire function with a zero of order 2 at the origin and a simple zero at all points of the sequence $a_n = |n|^{2/3}$, for $n \in \mathbb{Z} \setminus \{0\}$. It must not vanish at any other point.

Do the same for $a_n = |n|^{2/5}$ and $a_n = |n|^{5/4}$.