

## q-not-limit-zero-diverges<sup>11,40</sup>

$\forall f: (\mathbb{N} \rightarrow \mathbb{Q}).$   
 $(\forall n: \mathbb{N}. 0 \leq f(n))$   
 $\Rightarrow (\exists q: \mathbb{Q}. (0 < q \ \& \ (\forall n: \mathbb{N}. \exists m: \mathbb{N}. ((n \leq m) \ \& \ q \leq f(m))))))$   
 $\Rightarrow (\forall B: \mathbb{Q}. \exists n: \mathbb{N}. B \leq \sum_{0 \leq i < n}. f(i))$