

disjoint_increasing_onto^{4,23}

$\forall m, n, k: \mathbb{N}, f: (\mathbb{N}_{<n} \rightarrow \mathbb{N}_{<m}), g: (\mathbb{N}_{<k} \rightarrow \mathbb{N}_{<m}).$

increasing($f;n$)

\Rightarrow increasing($g;k$)

$\Rightarrow (\forall i: \mathbb{N}_{<m}. (\exists j: \mathbb{N}_{<n}. i = f(j) \in \mathbb{Z}) \vee (\exists j: \mathbb{N}_{<k}. i = g(j) \in \mathbb{Z}))$

$\Rightarrow (\forall j_1: \mathbb{N}_{<n}, j_2: \mathbb{N}_{<k}. \neg f(j_1) = g(j_2) \in \mathbb{Z})$

$\Rightarrow m = n+k \in \mathbb{N}$