

Weak induction

Let $F : \mathbb{Z}^+ \rightarrow \mathbb{Z}$ be defined by

- ▶ $F(1) = 1$
- ▶ $F(n) = 2F(n - 1)$ if $n > 1$

Then $F(n) = 2^n$ for all $n \in \mathbb{Z}^+$.

The proof by weak induction is straightforward.