

the principle of mathematical induction

if it starts true

and it stays true

then it's always true

the principle of mathematical induction

let P be some predicate

If $P(0)$ is true and $\forall k \in N P(k) \rightarrow P(k + 1)$, then $\forall n \in N P(n)$

if it starts true

and it stays true

then it's always true

- it is true for 0
- since it's true for 0, it's true for 1
- since it's true for 1, it's true for 2
- since it's true for 2, it's true for 3
- since it's true for 3, it's true for 4
- \vdots

proof by induction