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

⋮

proof by induction