

Mathematical Induction



Claim

Base Case

For $n=1$, the statement is true because $1 < 1 + 1$.

Inductive Step

Assume the statement is true for $n=k$. We need to show it is true for $n=k+1$.

For $n=k+1$, we have $k+1 < k+1 + 1$, which is true.

Therefore, by mathematical induction, the statement is true for all $n \geq 1$.

Q.E.D.

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