反证：最小反例

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归纳法逻辑上其实就等同于寻找最小反例的反证法：
让我们看看最小反例的反证法做了什么：

We just showed that

(a) $P(0)$ is true

(b) if $n > 0$, then $P(n-1) \to P(n)$

◇ Suppose there is some n for which $P(n)$ i

◇ Let n be the smallest counterexample

◇ Then, from (a) $n > 0$, so $P(n-1)$ is true

◇ Therefore, from (b), using direct inferenc

◇ This contradicts $(*)$.

归纳法其实做了同样的事情。但它是直接证明。

This is an *indirect proof*. Is it possible to prov *directly*?

Since $P(n-1) \to P(n)$, we see that

$P(0)$ implies $P(1)$, $P(1)$ implies $P(2)$, ...

s false $(*)$

e

e, $P(n)$ is true

e this fact