Tiling

**Proposition:** A $2^n$-by-$2^n$ chessboard with one corner missing can be tiled with L-shaped tiles.

**Strong Induction**

A *strong induction* proof is an induction proof in which the inductive hypothesis assumes that the predicate in question, $P(n)$, holds for all $n$ between the base value $b$, and $k$ for some arbitrary $k$. In other words, it is of the form

**Base Case** Prove $P(b)$ is true for some base value $b$. (There may be multiple base cases.)

**Inductive Step** Assume $P(n)$ is true for $b \leq n \leq k$ for fixed arbitrary $k$, then prove that this implies $P(k+1)$.

**Fundamental Theorem of Arithmetic**

**Fundamental Theorem of Arithmetic:** Any positive integer greater than 1 can be (uniquely) written as a product of primes.