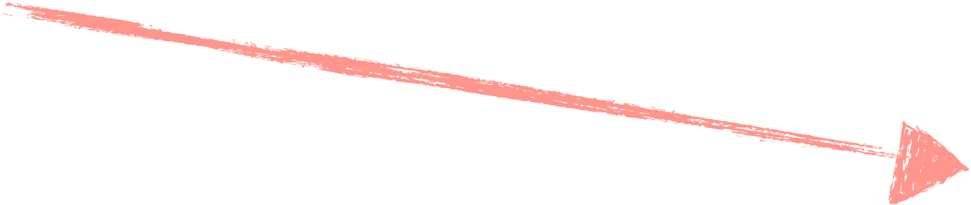
Proof.

end of proof



our first proof (by construction)


PROVE IT

"drop the mic"

our first proof (by construction)

Theorem
For all integers n, if n is even, then n^2 is even.

Proof.

- Pick an arbitrary even integer n: we want to show that n^2 is even
- Since n is even, there is some integer such that $n = 2k$
- This means that $n^2 = (2k)^2 = 4k^2 = 2(2k^2)$
- From this we see that there is an integer m (namely $2k^2$) where $n^2 = 2m$
- Therefore n^2 is even, which is what we wanted to show. ■

end of proof
"drop the mic"

let's try another

Theorem

For all integers m and n, if m and n are odd, then $m+n$ is even.