

**2.1 Theorem.** If  $n$  is a natural number greater than 1, then there exists a prime  $p$  such that  $p|n$ .

**Proof.** Let  $n \in \mathbb{N}$  greater than 1 be given. We want to show there exists a prime  $p$  such that  $p|n$ . Example: let  $n = 2$  and let  $p = 2$ . We find that  $2|2$ . Thus, if  $n$  is a natural number greater than 1, there exists a prime  $p$  such that  $p|n$ .  $\square$