

Recall that in class we proved

**Theorem A.** If  $n$  is a composite integer, then  $n$  has a factor less than or equal to  $\sqrt{n}$ .  
and

**Theorem B.** Every integer is divisible by at least one prime.

Problem 1. Use these to prove the following.

**Corollary.** If  $n$  is a composite integer, then  $n$  has at least one prime factor less than or equal to  $\sqrt{n}$ .

Problem 2. Use the corollary to determine whether 127 is a prime number or not. Explain your reasoning.