

1. Suppose you prove three statements  $P$ ,  $Q$  and  $R$ . You first prove  $P$  and use this to prove  $Q$ , and from  $Q$  you conclude  $R$ . If you call one of them Theorem, one of them Lemma, and one of them Corollary, which should you call which?
2. True or False:  $p \in \mathbb{N}$  is a prime number if and only if  $a > 1$  and  $a < p$  implies  $a$  does not divide  $p$ . (Here  $a \in \mathbb{N}$ .)
3. True or False: 0 is both even and odd.