

## 109 Spring 2011 - Truth Tables

**Exercise (I.2).** By using truth tables prove that, for all statements  $P$  and  $Q$ , the three statements

(1) ' $P \implies Q$ '

(2) ' $(P \text{ or } Q) \iff Q$ '

(3) ' $(P \text{ and } Q) \iff P$ '

are equivalent.

**Exercise (I.3).** Prove that the three basic connectives ‘or’, ‘and’, and ‘not’ can all be written in terms of a single connective ‘notand’ where ‘ $P$  notand  $Q$ ’ is interpreted as ‘not ( $P$  and  $Q$ )’.