Definition 0.1. A *statement* (or *proposition*) is a sentence which is either true or false, but not both.

Definition 0.2. The *truth value* of a given statement is true if that sentence is itself true, otherwise the truth value of that statement is false.

Definition 0.3. Let p be a statement. The *negation* of p, written $\neg p$, is the statment with the oposite truth value.

Definition 0.4. Let p and q be statements. The *disjunction* of p and q, written $p \vee q$, is the statment which is true when either p or q is true and false precisely when p and q are both false.

Definition 0.5. Let p and q be statements. The *conjunction* of p and q, written $p \wedge q$, is the statment which is true precisely when both p and q are true and is otherwise false.

Definition 0.6. A *statement form* (or *proposition form*) is an expression made up of statement variables and logical connections (such as $\neg$, $\vee$, or $\wedge$) which when substituting statements for statement variables becomes a statement.

Definition 0.7. A *truth table* for a statement form displays the truth values corresponding to every possible combination of truths values for its component statement variables.

Example 0.1. Truth tables for logical connectivesL: $\neg$ (not), $\vee$ (or), and $\wedge$ (and).

p	$\neg p$
T	F
F	T

p	q	$p \vee q$
T	T	T
T	F	T
F	T	T
F	F	F

p	q	$p \wedge q$
T	T	T
T	F	F
F	T	F
F	F	F

Example 0.2. Truth tables for $(p \vee q) \wedge \neg(p \wedge q)$

p	q	$(p \vee q) \wedge \neg(p \wedge q)$
T	T	F
T	F	T
F	T	T
F	F	F

Example 0.3. Truth tables for $(p \wedge q) \vee \neg r$

p	q	r	$(p \wedge q) \vee \neg r$
T	T	T	T
T	T	F	T
T	F	T	F
T	F	F	T
F	T	T	F
F	T	F	T
F	F	T	F
F	F	F	T