TTs for sentences By means of these rules we can construct TTs for compound wffs, exhibiting how their truth values are determined by the truth values of their sentence letters.

Example.

P	Q	R	(P → Q)	∨	(∼Q	&	R)
T	T	T	T	T	F	F	
T	T	F	T	T	F	F	
T	F	T	F	T	T	T	
T	F	F	F	F	T	F	
F	T	T	T	T	F	F	
F	T	F	T	T	F	F	
F	F	T	T	T	T	T	
F	F	F	T	T	T	F	
			(a)	*(d)*	*(b)*	*(c)*	

Table 3.3 TT for the sentence (P → Q) ∨ (∼Q & R).

Comment. By referring to the columns for P and Q, we construct column (a), for (P → Q), using the TT for conditionals (see table 3.2). Next, we construct column (b), for ∼Q, (see table 3.1). Column (c), for (∼Q & R) is constructed by referring to the columns for its conjuncts, ∼Q and R, and using the TT for conjunction (see table 3.2). Finally, we construct column (d), for (P → Q) ∨ (∼Q & R), by referring to those for its disjuncts, (P → Q) and (∼Q & R) (see table 3.2).

Comment. The column for a given component of a sentence (other than the sentence letters) is placed under that component's connective. For example, the column for (P → Q) in table 3.3 falls under its arrow.

Exercise 3.1 Construct TTs for the following sentences.

*i P ∨ (∼P ∨ Q)

*ii ∼(P & Q) ∨ P

*iii ∼(P → Q) → P