

## 2.14.1. Translation and Truth Table Completion Problem

For each of the two English sentences below, decide which formal sentence is its proper **translation**. (Use the **same translation key** for both sentences.) Then build the **truth table** for those two formal sentences.

- (1) We won't have *both* tuna *and* uni.  
 (2) We won't have tuna, but we'll have uni.  
 (3)  $(\sim P \wedge Q)$   
 (4)  $\sim(P \wedge Q)$

### Negation Rule

▲	$\sim$ ▲
1	0
0	1

### Conjunction Rule

●	▲	$(\bullet \wedge \blacktriangle)$
1	1	1
1	0	0
0	1	0
0	0	0

(3)			(4)		
P	Q	$\sim P$	$(\sim P \wedge Q)$	$(P \wedge Q)$	$\sim(P \wedge Q)$
1	1				
1	0				
0	1				
0	0				

Are the two formal sentences **logically equivalent**? Do their English counterparts seem to be **saying the same thing**?