EXERCISES OF WEEK TWO

Exercise 1 ((c), ex. 4, **EXERCISES 1.1**, page 25 of [Pin71])**.** If the sentence is true, show it with a truth table. If it is false, give an example. For instance
$$P \lor Q \Rightarrow Q$$
is false when P is true and Q is false, $P \lor Q$ is true and Q is false.

(a) $P \land Q \Rightarrow Q$

(b) $Q \Rightarrow P \lor Q$

(c) $Q \Rightarrow P \land Q$

(d) $(P \Rightarrow Q) \Leftrightarrow (\neg Q \Rightarrow \neg P)$

Exercise 2. In the following

	X	Y	Z	T
X	0	0	0	0
Y	1	0	0	1
Z	0	1	0	1
T	0	0	0	0

What are

(a) sets

(b) proper classes

(c) the class $\{x \mid x \notin x\}$.

REFERENCES

Pin71. Charles C. Pinter. *Set theory*. Addison-Wesley Publishing Co., Reading, Mass.-London-Don Mills, Ont., 1971.