

Homework 01 蒋云翔 22.6.5

Section 1.1:

Exercise 24. e) If you get the job, then you had the best credentials.

f) If there is a storm then the beach erodes.

g) If you want to log on to the server then you need to have a valid password.

h) If you begin your climb early then you will reach the summit.

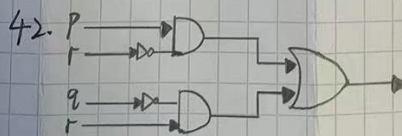
32. e)

p	q	$\neg p$	$\neg q \rightarrow \neg p$	$p \leftrightarrow q$	$(q \rightarrow \neg p) \leftrightarrow (p \leftrightarrow q)$
T	T	F	F	T	F
T	F	F	T	F	F
F	T	T	T	F	F
F	F	T	T	T	T

Section 1.2:

Exercise 8. b) $(r \wedge p) \rightarrow q$

d) $(r \vee p) \rightarrow q$



Section 1.3:

Exercise 12. a)

$$\begin{aligned} & [\neg p \wedge (p \vee q)] \rightarrow q \\ \equiv & [\neg p \wedge p] \vee (\neg p \wedge q) \rightarrow q \\ \equiv & (\neg p \vee q) \rightarrow q \\ \equiv & \neg(\neg p \vee q) \vee q \\ \equiv & (p \wedge \neg q) \vee q \\ \equiv & (p \vee q) \wedge (\neg q \vee q) \\ \equiv & \text{true} \end{aligned}$$

$$\begin{aligned} \text{a)} & [\neg p \wedge (p \vee q)] \rightarrow q \\ \equiv & \neg[\neg p \wedge (p \vee q)] \vee q \\ \equiv & [p \vee \neg(p \vee q)] \vee q \\ \equiv & [p \vee (\neg p \wedge \neg q)] \vee q \\ \equiv & [(p \vee \neg p) \wedge (p \vee \neg q)] \vee q \\ \equiv & (p \vee \neg q) \vee q \\ \equiv & \text{true} \end{aligned}$$