1.7.4

(c) $\because \{a\}^*(\{b\}\{a\}^*)^* \subseteq \{a,b\}^*$

设 $c \in \{a,b\}^*$

则 $c = a^*$ 或 $c = a^*ba^* \cdots ba^*$

$\therefore c \subseteq \{a\}^*(\{b\}\cdot\{a\}^*)^*$

$\Rightarrow \{a,b\}^* = \{a\}^*\cdot(\{b\}\cdot\{a\}^*)^*$

(d)

设 $w \in (L_1\Sigma^*L_2)$, $x \in L_1 \subseteq \Sigma^*$, $y \in \Sigma^*$, $z \in L_2 \subseteq \Sigma^*$

$\Rightarrow w = xyz$

$\Rightarrow xyz = w \in (\Sigma^*)^* = \Sigma^*$

$\because e \in L_1$, $e \in L_2$

$\Rightarrow w \in \Sigma^*$

$\Rightarrow w = eye \in (L_1\Sigma^*L_2)$

$\Rightarrow (L_1\Sigma^*L_2) = \Sigma^*$

1.7.6

$e \notin L$

1.8.3

(c)

$((a \cup aa \cup b^*)b)^* aaa(bb^*(a \cup aa \cup b^*))^*$

1.8.5

(a)

√；baaa由0个a，1个b，2个a

(b)

√；a^*b^* 由一串a接一串b组成；如果b^*a^*也描述，a不能跟着b，所以要么0个a要么0个b，就是一串a或者一串b，就是$a^* \cup b^*$

(c)

X；$a^*b^* \cap b^*c^* = b^*$

(d)

X；如果d在$(a(\epsilon d)^*b)^*$中，一定后面有c或者b所以不行