

(续1-1作业)

(2)  $A \rightarrow (B \rightarrow C) = B \rightarrow (A \rightarrow C)$

A	B	C	$B \rightarrow C$	$A \rightarrow (B \rightarrow C)$	$A \rightarrow C$	$B \rightarrow (A \rightarrow C)$
0	0	0	1	1	1	1
0	0	1	1	1	1	1
0	1	0	0	1	1	1
0	1	1	1	1	1	1
1	0	0	1	1	0	1
1	0	1	1	1	1	1
1	1	0	0	0	0	0
1	1	1	1	1	1	1

因为真值等价, 所以逻辑等价

(3) 求公式  $(\neg P_1 \rightarrow P_2) \rightarrow P_3$  的主析取范式和合取范式

$P_1$	$P_2$	$P_3$	$\neg P_1$	$\neg P_1 \rightarrow P_2$	$(\neg P_1 \rightarrow P_2) \rightarrow P_3$
0	0	0	1	0	1
0	0	1	1	0	0
0	1	0	1	1	0
0	1	1	1	1	0
1	0	0	0	1	0
1	0	1	0	1	0
1	1	0	0	1	0
1	1	1	0	1	1

合取范式  $(\neg P_1 \vee P_3) \wedge (\neg P_2 \vee P_3)$

析取范式  $(\neg P_1 \wedge \neg P_2) \vee P_3$

4. 计算下列逻辑公式的真度

(1)  $(P_1 \vee P_2) \rightarrow P_3$

$P_1$	$P_2$	$P_3$	$P_1 \vee P_2$	$(P_1 \vee P_2) \rightarrow P_3$
0	0	0	0	1
0	0	1	0	1
0	1	0	1	0
0	1	1	1	1
1	0	0	1	0
1	0	1	1	1
1	1	0	1	0
1	1	1	1	1

$T((P_1 \vee P_2) \rightarrow P_3) = 5/8$

(2)  $(P_1 \rightarrow P_2) \vee (P_3 \rightarrow P_4)$

$P_1$	$P_2$	$P_3$	$P_4$	$P_1 \rightarrow P_2$	$P_3 \rightarrow P_4$	$(P_1 \rightarrow P_2) \vee (P_3 \rightarrow P_4)$
0	0	0	0	1	1	1
0	0	0	1	1	1	1
0	0	1	0	1	0	1
0	0	1	1	1	1	1
0	1	0	0	0	1	1
0	1	0	1	0	1	1
0	1	1	0	0	1	1
0	1	1	1	0	1	1
1	0	0	0	1	1	1
1	0	0	1	1	1	1
1	0	1	0	0	0	0
1	0	1	1	0	1	1
1	1	0	0	1	1	1
1	1	0	1	1	1	1
1	1	1	0	1	1	1
1	1	1	1	1	1	1

$T((P_1 \rightarrow P_2) \vee (P_3 \rightarrow P_4)) = 15/16$

(3)  $(\neg P_1 \rightarrow P_2) \rightarrow P_3$

$\neg P_1$	$P_2$	$P_3$	$\neg P_1 \rightarrow P_2$	$(\neg P_1 \rightarrow P_2) \rightarrow P_3$
0	0	0	1	0
0	0	1	1	1
0	1	0	1	0
0	1	1	1	1
1	0	0	0	0
1	0	1	0	0
1	1	0	1	0
1	1	1	1	1

$T((\neg P_1 \rightarrow P_2) \rightarrow P_3) = 5/8$