课后作业：

2.5,3,4,5,9,10,11,16,17,21

3. (1) $(A+B)(\bar{A}+C)(B+C)+A\bar{B}$

$=(A+B)(\bar{A}+C)+A\bar{B}$

$=\bar{A}B+AC+BC+A\bar{B}$

$=\bar{A}B+AC+A\bar{B}$

(2) $\bar{B}+AB+\bar{A}=\bar{A}\bar{B}+AB$

(3) $\overline{AB+C}\,(A+C)=\bar{A}\bar{B}\bar{C}(A+C)=(\bar{A}\bar{C}+\bar{B}\bar{C})(A+C)$

$=A\bar{B}\bar{C}$

(4) $\overline{(A+\bar{B}+C)(\bar{A}+\bar{C})}=\overline{A+\bar{B}+C}+\overline{\bar{A}+\bar{C}}$

$=AC+\bar{A}BC$

4. (1) $F'=\overline{[(A+B)C+D]E}+\bar{B}$

$\bar{F}=[(A+B)C+D]E+B$

(2) $\bar{F}'=(A+B)[AC+\bar{C}(D+E)]$

$\bar{F}=(\bar{A}+\bar{B})[\bar{A}\bar{C}+C(\bar{D}+\bar{E})]$

(1) $F=[(AB+C)D+E]\bar{B}$

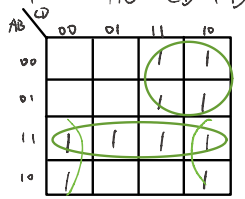
(2) $F=AB+(A+C)(\bar{C}+DE)$

5. 已知函数 F 的对偶函数 $F'=AB+C\,D+BC$，写出 F 及F的代数表达式。

$F=(F')'=(A+B)(C+D)(B+C)$

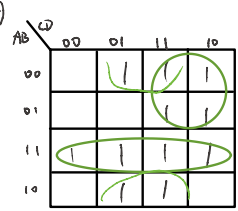
$\bar{F}=\bar{A}\bar{B}+\bar{C}\bar{D}+\bar{B}\bar{C}$

9. (1)



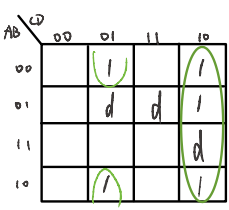
$F=\bar{A}C+AB+A\bar{D}$

(2)



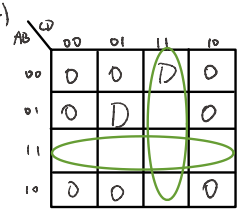
$F=\bar{A}C+\bar{B}D+AB$

(3)



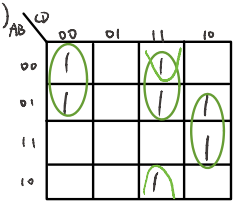
$F=C\bar{D}+\bar{B}\bar{C}D$

(4)



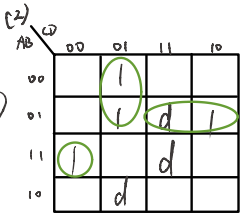
$F=AB+CD$

10.(1)



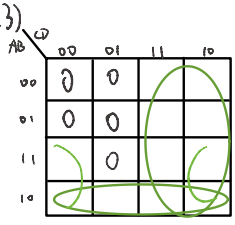
$F=\bar{A}\bar{C}\bar{D}+\bar{A}C\bar{D}+B\bar{C}\bar{D}+\bar{B}C\bar{D}$

(2)



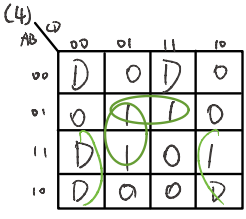
$F=\bar{A}\bar{C}D+\bar{A}BC+AB\bar{C}\bar{D}$

(3)



$F=C+\bar{A}\bar{B}+A\bar{D}$

(4)



$F=\bar{A}BD+B\bar{C}D+A\bar{D}$

11.

(1) $F=A\bar{B}+\bar{A}C+\bar{C}\bar{D}+D$

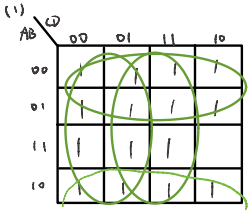
(2) $F=(A+\bar{C})(B+D)(B+\bar{D})$

$=A\bar{B}+\bar{A}C+C+D$ 代数法

$F'=A\bar{C}+BD+B\bar{D}=A\bar{C}+B$

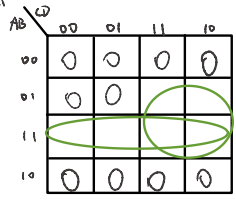
$\therefore F=F''=(A+\bar{C})B$

(1)



$F=\bar{A}+\bar{B}+\bar{C}+D$

(2)



$F=AB+B\bar{C}$

16. 将 F = AB + CD 化为与非形式。

17. 将 $F=\bar{A}C+BD$ 化为或非形式。

$F=\overline{\bar{F}}=\overline{\bar{A}\bar{B}\cdot\bar{C}\bar{D}}=\overline{(\bar{A}+\bar{B})(\bar{C}+\bar{D})}$

$F=\overline{\overline{\bar{A}C+\bar{B}D}}$

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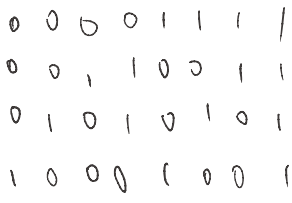

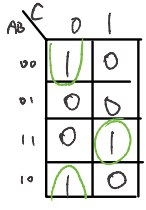

$F=\bar{B}\bar{C}+ABC$