08.03.2022 III седмица С.Ч.

Зад 1

$$Y(A,B,C,D_2) = (\overline{B} + C + D),\ \overline{A}\ \overline{C}\ \overline{D},\ (\overline{B} + C + \overline{D}) + (\overline{A} + \overline{B} + D)\ B\ C\ \overline{D}$$

ДУНФ, СДУНФ, МДУНФ, МКУНФ

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

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

ДУНФ

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

$A\bar{B}\bar{C}\bar{D} + \bar{A}B\bar{C}\bar{D} + \bar{A}\bar{B}C\bar{D} + \bar{A}\bar{B}\bar{C}D +$
$A\bar{B}CD + \bar{A}B\bar{C}D + AB\bar{C}\bar{D} + AB\bar{C}D + A\bar{B}C\bar{D}$

1100 0100 0000 1101 0101 1111
1100 1010 0010

AB \ CD	00	01	11	10
00	1	0	0	1
01	1	0	0	0
11	1	1	0	1
10	0	0	0	1

$f_{минуз} = B\bar{C} + AC\bar{D} + \bar{D}\bar{A}\bar{B}$

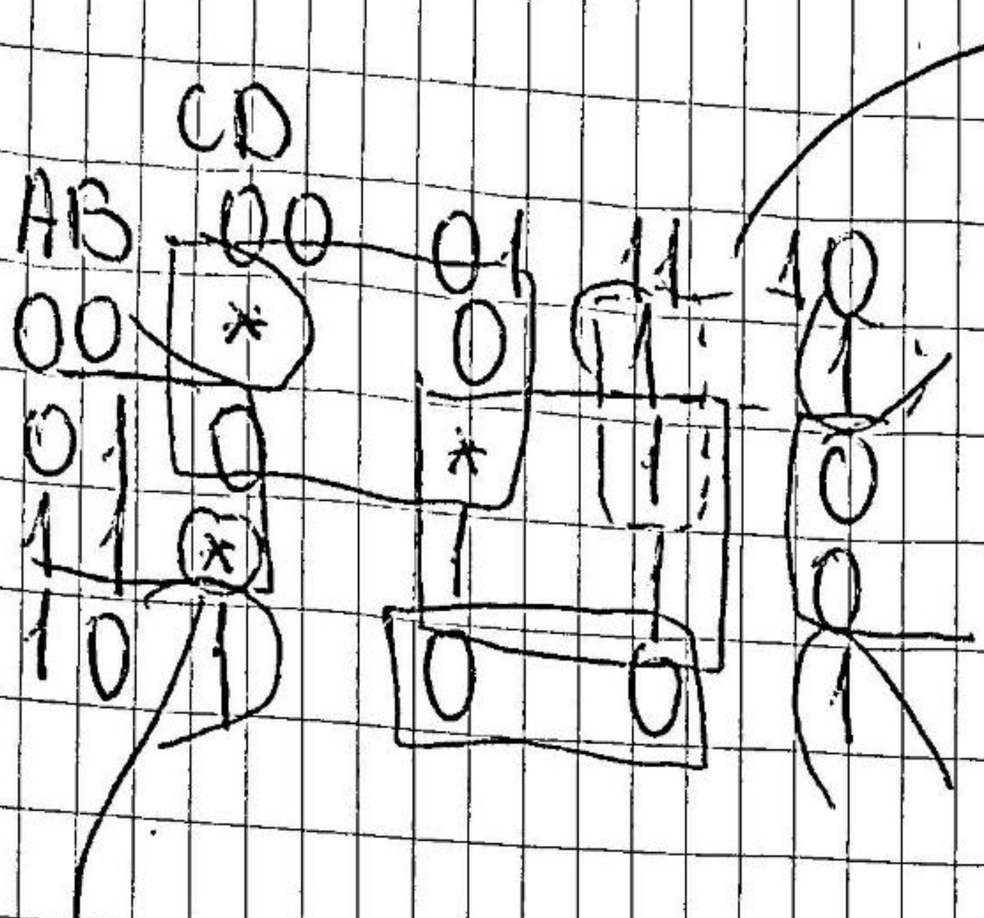
$f_{минуз} = (\bar{C}+\bar{D})(\bar{D}+B)(C+\bar{A}+B)(\bar{C}+A+\bar{B})$

$f_{сумма} = \Lambda m(1,3,6,7,8,9,11,13) =$

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

Зад 2

$f(A,B,C,D) = V_m(2,3,7,8,10,13,15) + V(0,5,12)$



→ МДНФ1 , МДНФ2

↓ не ане задължително да попълваме всички * могат да правят групи с 0

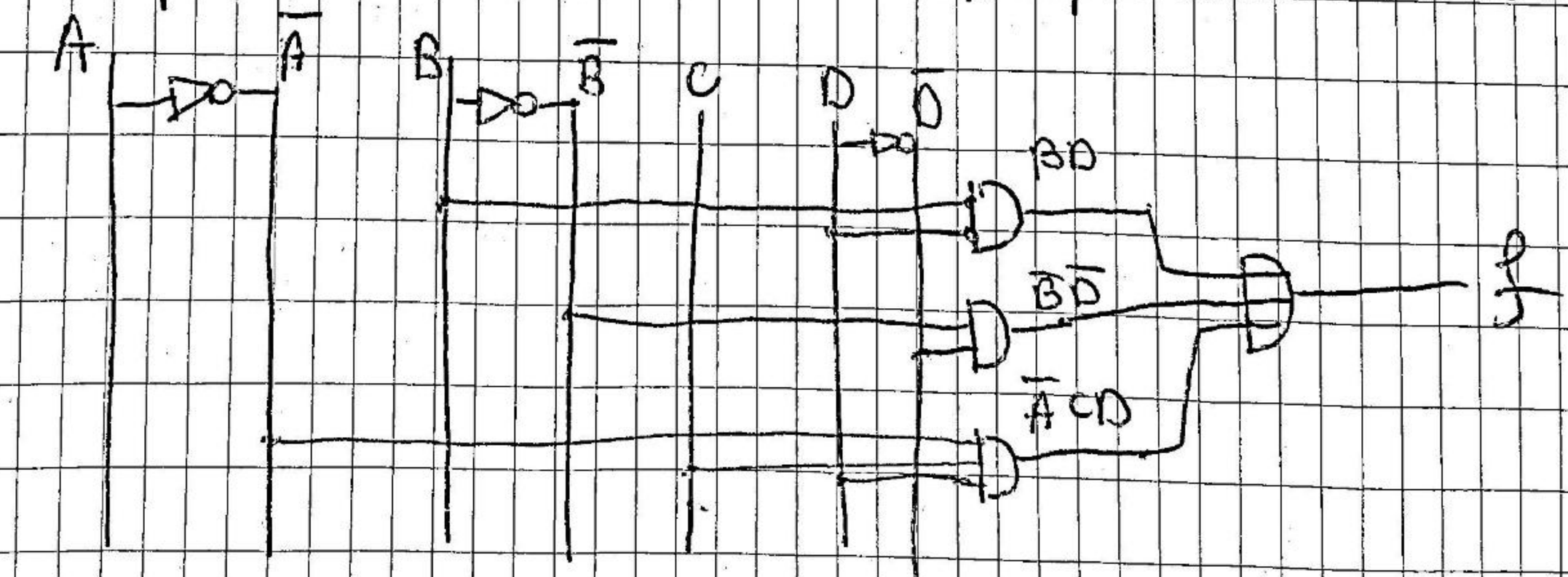
$f_{МДНФ_2} = BD + \overline{B}\,\overline{D} + \overline{A}\,CD$

$f_{МДНФ_{\overline{2}}} = BD + \overline{B}\,\overline{D} + \overline{A}\,\overline{B}\,C$

$f_{МСКФ_1} = (A+C)(\overline{B}+D)(\overline{A}+B+\overline{D})$

1. В базис И, ИЛИ, НЕ

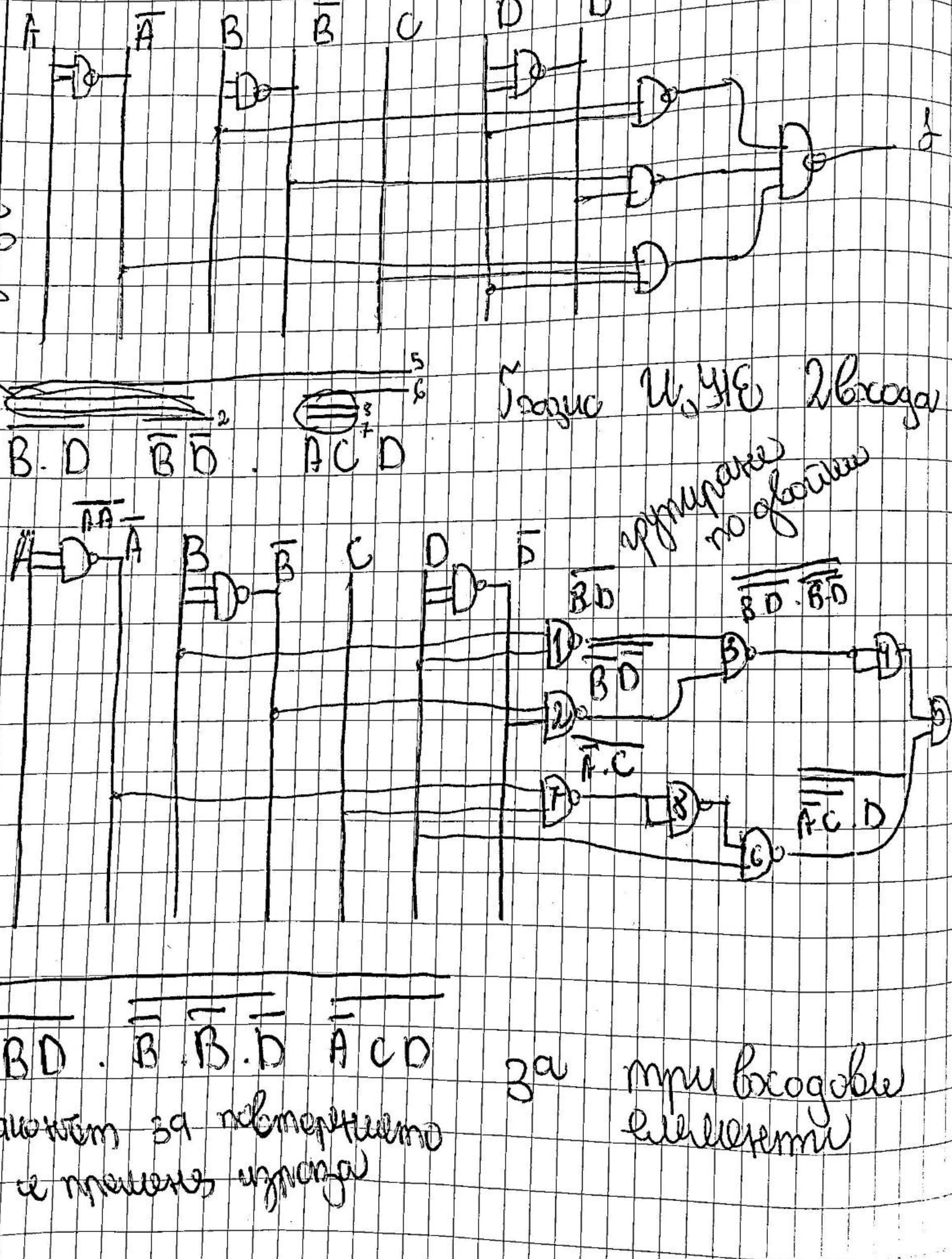
избираме с по-малкото инверсии (от МДНФ2)



И-НЕ ИЛИ-НЕ

2. Базис И,ИЛИ чрез сбора от И-ИЛИ елемент

$$f = BD + \overline{B}\,\overline{D} + \overline{A}CD = \overline{\overline{BD}\cdot\overline{\overline{B}\,\overline{D}}\cdot\overline{\overline{A}CD}} = \overline{\overline{BD}\cdot\overline{\overline{B}\,\overline{D}}\cdot\overline{\overline{A}CD}}$$



3. Базис „ИЛИ, НЕ" – МКНФ

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

$$= \overline{\overline{A+C} + \overline{\bar{B}+D} + \overline{\bar{A}+B+D}}$$ (без ограничение)

групираме две от тях

В

$$\overline{\overline{\overline{\overline{A+C} + \overline{\bar{B}+D}}} + \overline{\bar{A} + \overline{\overline{B+D}}}}$$ 2-входови