

① الأعداد الثمانية (الأساس 8) إلى العشرة (الأساس 10) (214)₈ = (140)₁₀

① $(214)_8 = (?)_{10}$

$2 \times 8^2 + 1 \times 8^1 + 4 \times 8^0 = 128 + 8 + 4 = (140)_{10}$

② $(63)_{10} = (?)_2 = (111111)_2$

القسمة	خارج القسمة	الباقى
$\frac{63}{2}$	31	1
$\frac{31}{2}$	15	1
$\frac{15}{2}$	7	1
$\frac{7}{2}$	3	1
$\frac{3}{2}$	1	1
$\frac{1}{2}$	0	1

②

$$\begin{array}{r}
 A = 101000 \\
 + B = 100011 \\
 \hline
 1011011 \\
 01010110 \\
 \hline
 (01010001)_{BCD}
 \end{array}$$

$A+B = (51)_{10}$

4

$$A = \begin{pmatrix} 7 & 3 & 8 & 8+3 \\ 7 & 4 & 0 & 3 \end{pmatrix}_8$$

$$-B = \begin{pmatrix} 6 & 3 & 2 & 4 \end{pmatrix}_8$$

$$(1 \ 0 \ 5 \ 7)_8$$

2 4

5

$$X = \begin{pmatrix} 14 & 13 & 19 & 16+1 \\ F & 0 & 0 & 1 \end{pmatrix}_{16}$$

$$\rightarrow y = \begin{pmatrix} A & D & C & B \end{pmatrix}_{16}$$

$$(4 \ 2 \ 3 \ 6)_{16}$$

2

6

$$X = 101010$$

$$-y = 100111$$

باستخدام القسمة الثنائية

2

جمع

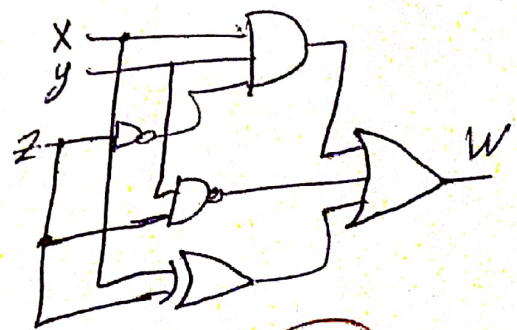
$$\begin{array}{r} X \\ \oplus \\ y \end{array}$$

المترادف

$$\begin{array}{r} X \\ \oplus \\ y \\ \oplus \\ \hline X-y = 000011 \end{array}$$

2 4

X	y	z	\bar{z}	$xy\bar{z}$	$X\bar{z}$	$(x \oplus z)$	W
0	0	0	1	0	1	0	1
0	0	1	0	0	1	1	1
0	1	0	1	0	1	0	1
0	1	1	0	0	1	1	1
1	0	0	1	0	1	0	1
1	0	1	0	0	1	0	1
1	1	0	1	1	0	1	0
1	1	1	0	0	0	0	0



3

$$P(R, S, T) = S + \bar{R}\bar{T}$$

3

~~P(R, S, T)~~

SOP? POS?

B Q2

R	S	T	$\bar{R}\bar{T}$	F
0	1	0	1	1 $m_0 = \bar{R}\bar{S}\bar{T}$
0	1	1	0	0 $m_1 = (R+S)\bar{T}$
0	1	1	1	1 $m_2 = \bar{R}S\bar{T}$
0	1	0	0	1 $m_3 = \bar{R}S\bar{T}$
1	0	1	0	0 $m_4 = (\bar{R}+S+T)$
1	0	0	0	0 $m_5 = (\bar{R}+S+\bar{T})$
1	0	1	0	1 $m_6 = RST$
1	0	0	0	1 $m_7 = RST$

1 SOP = $m_0 + m_2 + m_3 + m_6 + m_7$

1 POS = $M_1 \times M_4 \times M_5$

وگذاشته

4

A Q3

$$F = X + \bar{X}Y\bar{Z} + Y + Z$$

$$F = X + \bar{X}Y\bar{Z} + Y\bar{Z}$$

$$= X + \bar{Z}[\bar{X}Y + Y] \leftarrow \text{8 وگذاشته 2}$$

$$= X + \bar{Z}[(\bar{X}+Y)(Y+\bar{X})]$$

$$= X + \bar{Z}\bar{Y} + \bar{Z}X$$

8 وگذاشته

$$= \bar{Y}\bar{Z} + (X+\bar{X})(X+\bar{Z})$$

2

$$= \bar{Y}\bar{Z} + \bar{Z} + X$$

$$= \bar{Z}(\bar{Y}+1) + X = \boxed{\bar{Z} + X} \neq + 2$$

B Q3

wz	00	01	11	10
00	1	1	1	1
01	1	1	1	
11			1	1
10	1			

$$F = \bar{X}\bar{Z} + XY + Y\bar{W}$$

4

#

	A	B	C	F ₁	F ₂
0	0	0	0	0	1
1	0	0	1	1	0
2	0	1	0	0	1
3	0	1	1	1	0
4	1	0	0	0	1
5	1	0	1	1	0
6	1	1	0	0	1
7	1	1	1	1	0

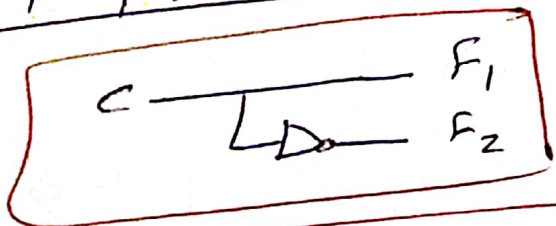
Q4

BC	00	01	11	10
A	0	1	1	0
A	1	1	1	0

$F_1 = C$

BC	00	01	11	10
A	0	1	0	1
A	1	1	0	1

$F_2 = \bar{C}$



$W = R + s\bar{t}$

NOR

اولاً نجد المتكامل في صورة POS قانونه (8)

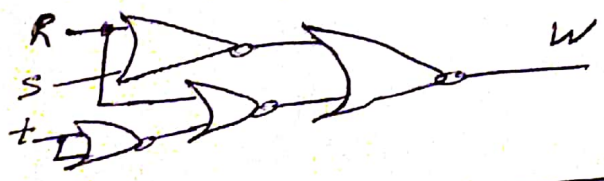
$W = (R + s)(R + \bar{t})$ ①

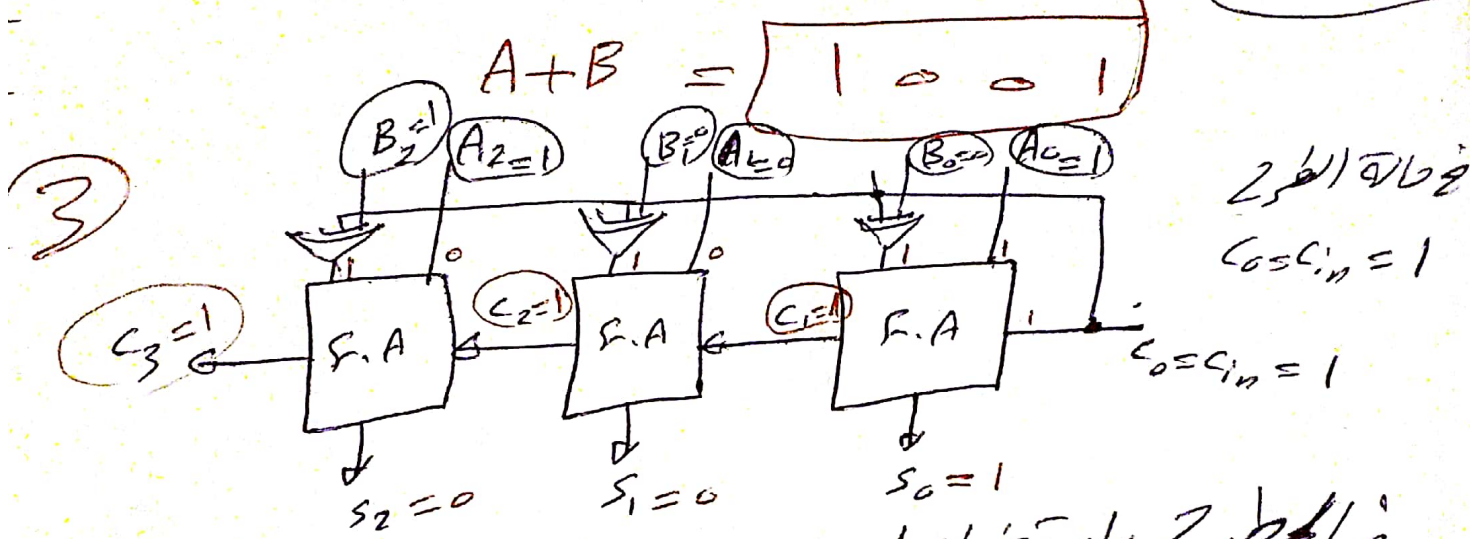
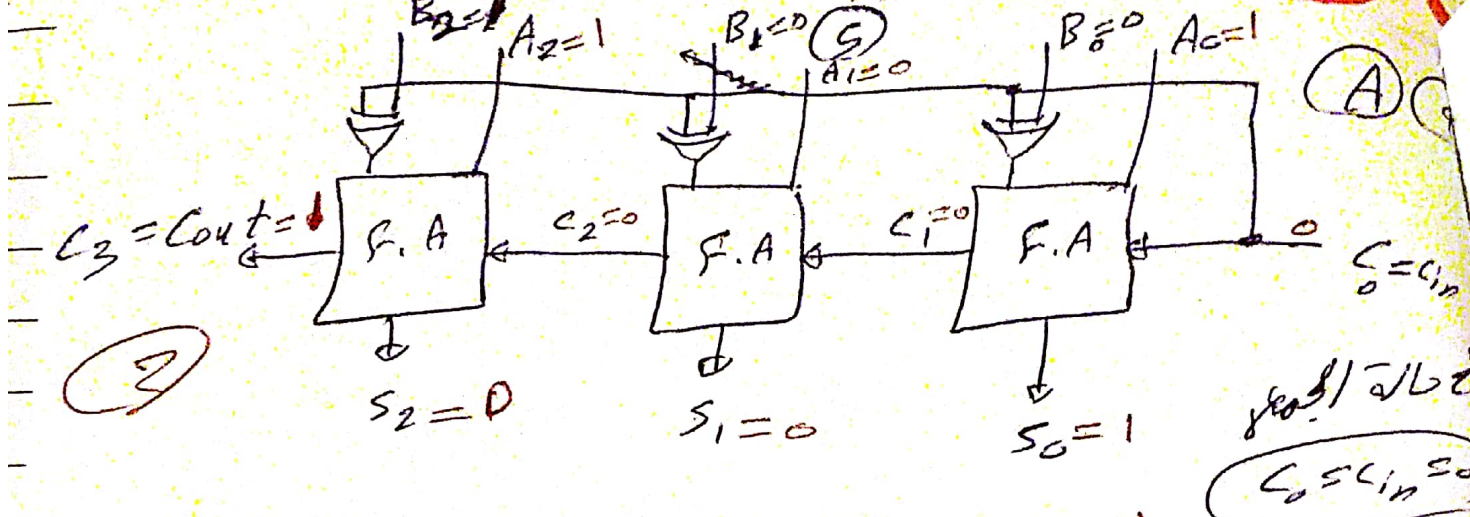
نفس ① $\bar{W} = \overline{(R + s)(R + \bar{t})}$ ①

نفس ② $\bar{W} = \overline{(R + s)} + \overline{(R + \bar{t})}$ ①

نفس ③ $\bar{W} = \bar{W} = \overline{(R + s)} + \overline{(R + \bar{t})}$ ①

نفس ④





في الطريقة السابقة، اشارة اعداد المدخلات والاعداد الخارجة
 الى خارج من خارج الدارة

$A-B = 001$

