

2.5 Application - Number Sets & Circuits For Addition

p. 94 #2, 5, 8, 11, 16, 20-21, 39-40, 42-43, 45-46

(2) $55_{10} = 32 + 16 + 0 + 4 + 2 + 1$
 $= 110111_2$

(5) $1609_{10} = 1024 + 512 + 0 + 0 + 64 + 0 + 0 + 8 + 0 + 0 + 1$
 $= 11001001001_2$

(8) $10111_2 = 16 + 0 + 4 + 2 + 1$
 $= 23_{10}$

(11) $1000111_2 = 64 + 0 + 0 + 0 + 4 + 2 + 1$
 $= 71_{10}$

(16)
$$\begin{array}{r} 1111111 \\ 110111011_2 \\ + 1001011010_2 \\ \hline 10000010101_2 \end{array}$$

(20)
$$\begin{array}{r} 0101010_2 \\ - 10111_2 \\ \hline 111101 \end{array}$$

(21)

	P	Q	R	C_1	S_1	C_2	S	T
a)	1	1	1	1	0	0	0	1
b)	0	1	0	0	1	0	0	1
c)	1	0	1	0	1	1	0	0

(39) $E0D_{16} = 14 \cdot 16^2 + 0 \cdot 16^1 + 13 \cdot 16^0$
 $= 3597_{10}$

(40) $39EB_{16} = 3 \cdot 16^3 + 9 \cdot 16^2 + 14 \cdot 16^1 + 11 \cdot 16^0$
 $= 14827_{10}$

(42) $B53DF8_{16}$ $B5_{16} = 10110101_2$
 $3D_{16} = 00111101_2$
 $F8_{16} = 11111000_2$
 $\rightarrow = 10110101001111011111000_2$

(43) $4ADF83_{16}$ $4A_{16} = 01001010_2$
 $DF_{16} = 11011111_2$
 $83_{16} = 10000011_2$
 $\rightarrow = 1001010110111110000011_2$

(45)
$$\begin{array}{r} 1011011111000101_2 \\ \hline 11 \quad 7 \quad 12 \quad 5 \\ B \quad 7 \quad C \quad 5 \\ \hline = B7C5_{16} \end{array}$$

(46)
$$\begin{array}{r} 11001001011100_2 \\ \hline 3 \quad 2 \quad 5 \quad 12 \\ 3 \quad 2 \quad 5 \quad C \\ \hline = 325C_{16} \end{array}$$