CP230 – Problem Set 3

Problem 1.13 [H&H]

Exercise 1.13 Convert the following unsigned binary numbers to decimal. Show your work.

(a) 1010_2

(b) 110110_2

(c) 11110000_2

(d) 0001000101001111_2

Problem 1.14 [H&H]

Exercise 1.14 Convert the following unsigned binary numbers to decimal. Show your work.

(a) 1110_2

(b) 100100_2

(c) 11010111_2

(d) 0111010101001002

Problem 1.18 [H&H]

Exercise 1.18 Convert the following hexadecimal numbers to decimal. Show your work.

(a) $4E_{16}$

(b) $7C_{16}$

(c) $ED3A_{16}$

(d) $403FB001_{16}$

Problem 1.25 [H&H]

Exercise 1.25 Convert the following decimal numbers to unsigned binary numbers.

(a) 42_{10}

(b) 63_{10}

(c) 229_{10}

(d) 845_{10}

Problem 1.26 [H&H]

Exercise 1.26 Convert the following decimal numbers to unsigned binary numbers.

(a) 14_{10}

(b) 52_{10}

(c) 339_{10}

(d) 711_{10}

Problem 1.49 [H&H]

Exercise 1.49 A memory on the Pentium II microprocessor is organized as a rectangular array of bits with 2^8 rows and 2^9 columns. Estimate how many bits it has without using a calculator.

Problem 2.28 [H&H]

NOTE: Don't cares are denoted with X

Exercise 2.28 Find a minimal Boolean equation for the function in Figure 2.85. Remember to take advantage of the don't care entries.

A	B	C	D	Y
0	0	0	0	X
0	0	0	1	X
0	0	1	0	X
0	0	1	1	0
0	1	0	0	0
0	1	0	1	X
0	1	1	0	0
0	1	1	1	X
1	0	0	0	1
1	0	0	1	0
1	0	1	0	X
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	X
1	1	1	1	1

Figure 2.85 Truth table for Exercise 2.28

Problem 2.29 [H&H]

Exercise 2.29 Sketch a circuit for the function from Exercise 2.28.