HomeWork 1

Number Conversion

1) Fill in the table below

Binary	Octal	Decimal	Hexadecimal
11 1111 1111	1777	1023	0x3FF
10 0100 1001	1111	585	0x249
100 0101 0111	2127	1111	0x457
1 0001 0001 0001	10421	4369	0x1111

Binary Operations

2)complete the operation,please answer in the octal

0x111 + ____7056_____ = $(1111\ 0011\ 1111)_2$

___44_____ * $(1011\ 0000)_2$ = 0x18c0

3)Assume we are running on an 8-bit machine using two's complement for signed integers, An"int" is encoded using 8 bits.

Question: Please print the c value and explain the reason.

Unsigned int a = 34,b=210,c;

c = a + b;

244 0r -12

4)Given 8-bit wide A and B with hexadecimal expression 0xB3 and 0x2C respectively. Calcute the values of the following expressions, please answer in the hexadecimal.

A) A&B 0x20

B) A && B 0x01

C) A | B 0xBF

D) A || B 0x01

E) A ^ B 0x9F

F) ~A | ~B 0xDF

5)Fill in the table below with the results of shift operation given below(Assume X is 8-bit wide).Please answer in the hexadcimal.

X	X<<2	X>>3(logical)	X>>4(Arithmetic)
0xA4	0x90	0x14	0xFA
0xCE	0x38	0x19	0xFC
0xB9	0xE4	0x17	0xFB
0x0E	0x38	0x01	0x00