Number Conversion

Fill in the table below

Binary	Octal	Decimal	Hexadecimal
1001101111000	11570	4984	0x1378
100 0000 1111	2017	1039	0x40F
111 0111 1111	3577	1919	0x77F
1101 1110 1010 1101	157255	57005	0xDEAD
1 0111 0111	567	375	0x177

Binary Operations

1) Given 8-bits wide A and B with hexadecimal expression 0x5A and 0x9C respectively. Calculate the values of the following expressions

a) A & B

b) A && B

c) A | B

d) A || B

e) ~A ^ ~B

f) (A || B) ^(A &B)

a) 0x18

b) 1

c) 0xDE

d) 1

e) 0XC6

f) 0x19

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

X	X << 2	X>>3(Logical)	X>>3(Arithmetic)

0x4C	0x30	0x09	0x09
0xEA	0xA8	0x1D	0xFD

3) Design a C expression, which generates a word (32-bit) consisting of the lower 24 bits of x and the remaining 8 bits of y.

For example, x = 0x89ABCDEF and y = 0x76543210, it will generate 0x76ABCDEF

(x & 0x00FFFFFF) | (y & 0xFF000000)