Practice Problem 2.16 (solution page 184)

Fill in the table below showing the effects of the different shift operations on single-byte quantities. The best way to think about shift operations is to work with binary representations. Convert the initial values to binary, perform the shifts, and then convert back to hexadecimal. Each of the answers should be 8 binary digits or 2 hexadecimal digits.

	a	a << 2		Logical a >> 3		Arithmetic a >> 3	
	Hex	Binary	Binary	Hex	Binary	Hex	Binary	Hex
0xD4	1101 0100	0101 0000	0x50	0000 1010	0x 1A	1111 1010	0xFA
0x64	0110 0100	1001 0000	0x90	0000 1100	0x0C	0000 1100	0x0C
0x72	0111 0010	1100 1000	0xC8	0000 1110	0x0E	0000 1110	0x0E
0x44	0100 0100	0001 0000	0x10	0000 1000	0x08	0000 1000	0x08

Hex digit	0	1	2	3	4	5	6	7
Decimal value	0	1	2	3	4	5	6	7
Binary value	0000	0001	0010	0011	0100	0101	0110	0111
Hex digit	8	9	A	B	C	D	E	F
Decimal value	8	9	10	11	12	13	14	15
Binary value	1000	1001	1010	1011	1100	1101	1110	1111

Figure 2.2 **Hexadecimal notation.** Each hex digit encodes one of 16 values.