**CHAPTER 1**

2. What is the decimal representation of each of the following unsigned binary integers?

a. 00110101 = 53

b. 10010110 = 150

c. 11001100 = 204

4. Calculate binary 00001101 minus 00000111.

* 00000110 = 6

6. What is the minimum number of binary bits needed to represent each of the following unsigned decimal integers?

a. 4095 = 12

b. 65534 = 16

c. 42319 = 16

8. What is the binary representation of the following hexadecimal numbers?

a. 0126F9D4 = 0000\_0001\_0010\_0110\_1111\_1001\_1101\_0100

b. 6ACDFA95 = 0110\_1010\_1100\_1101\_1111\_1010\_1001\_0101

c. F69BDC2A = 1111\_0110\_1001\_1011\_1101\_1100\_0010\_1010

10. What is the unsigned decimal representation of each of the following hexadecimal integers?

a. 62 = 98

b. 4B3 = 1203

c. 29F = 671

12. What is the 16-bit hexadecimal representation of each of the following signed decimal integers?

a. -21 = FFFFFFFFFFFFFFEB

b. -45 = FFFFFFFFFFFFFFD3

14. The following 16-bit hexadecimal numbers represent signed integers. Convert each to decimal.

a. 4CD2 = 19666

b. 8230 = -32208

16. What is the decimal representation of each of the following signed binary numbers?

a. 10000000 = -128

b. 11001100 = -52

c. 10110111 = -73

18. What is the 8-bit binary (two’s-complement) representation of each of the following signed decimal integers?

a. -72 - 10111000

b. -98 - 10011110

c. -26 – 11100110

20. What is the sum of each pair of hexadecimal integers?

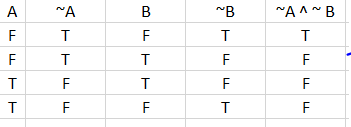
a. 7C4 + 3BE = B82

b. B69 + 7AD = 1316

22. Decimal 71, Hex 47

24. 2^85 -1

26. Create a truth table to show all possible inputs and outputs for the boolean function described by ( ). How would you describe the rightmost column of this table in relation to the table from question number 25? Have you heard of *De Morgan’s Theorem?*



Did not do Question number 25 So can-not compare

28. Two Selector Bits

**Chapter 2**

2. Name at least four CPU status flags

* Carry Flag, OverFlow Flag, Sign Flag, Zero Flag

4. Which flag is set when the result of a signed arithmetic operation is either too large or too small to fit into the destination?

* Overflow Flag

6. Which flag is set when an arithmetic or logical operation generates a negative result?

* The Sign Flag

8. On a 32-bit processor, how many bits are contained in each floating-point data register?

* 80 Bits in each

10. (True/False): In current 64-bit chip implementations, all 64 bits are used for addressing.

* False

12. (True/False): Static RAM is usually less expensive than dynamic RAM.

* False

14. (True/False): In native 64-bit mode, you can use 16-bit real mode, but not the virtual-8086 mode.

* False

16. (True/False): The 64-bit version of Microsoft Windows does not support virtual-8086 mode.

* True

18. (True/False): In 64-bit mode, you can use up to eight floating-point registers.

* True

20. (True/False): CMOS RAM is the same as static RAM, meaning that it holds its value without any extra power or refresh cycles

* False

22. (True/False): The 8259A is a controller that handles external interrupts from hardware devices

* True

24. (True/False): VRAM stands for virtual random access memory.

* False

26. Why do game programs often send their sound output directly to the sound card’s hardware ports?

* It is faster to execute and programmers often try to take advantage of the latest features in sound cards.