CS 271Computer Architecture and Assembly Language

Self-Check for Lecture#7

Solutions are posted

1. Add 8-bit binary. Show your work (carry bits, etc.) Check your work by converting all three numbers to decimal.

$$\begin{array}{r} 00010111 \\ +\ 01011101 \end{array}$$

2. Subtract 8-bit binary. Show your work (borrow bits, etc.) Check your work by converting all three numbers to decimal.

$$\begin{array}{r} 01110011 \\ -\ 01011101 \end{array}$$

3. Given the following decimal multiplication problem:

$$\begin{array}{r} 2013 \\ \times\ 512 \end{array}$$

   Suppose that we are using 32-bit integers. Will the result cause overflow?
   (Note: You should be able to answer the question without doing the multiplication)

4. Show the hexadecimal "endian" form of the 32-bit representation of 24685(decimal).

   A. Big-endian:

   B. Little-endian:

5. Show the IEEE Standard 754 single-precision binary (32-bit) representation of the floating-point number 23.45. Indicate the three parts of the representation.

6. Convert single-precision floating-point hexadecimal 42E48000 to decimal floating-point.