1) Perform the following calculations:

(a) \[ \begin{array}{c} 10101011_2 \\ + 101110_2 \end{array} \]  
(b) \[ \begin{array}{c} 1000101_2 \\ - 110011_2 \end{array} \]  
(c) \[ \begin{array}{c} 9CF2_{16} \\ + 82C3_{16} \end{array} \]  
(d) \[ \begin{array}{c} 9A4CF3_{16} \\ - 82A3D_{16} \end{array} \]  

2) Convert \( 437_{10} \) to hexadecimal (base 16).

3) Convert \(-437_{10} \) to two’s complement number.

4) What decimal (base 10) value is represented by the 32-bit signed, two’s complement value represented as a hexadecimal \( \text{FFFF FF8A}_{16} \)?

5) Use Booth’s algorithm on 8-bit two’s complement numbers to multiply \(+10_{10} \) (as the multiplicand) by \(-37_{10} \) (as the multiplier) to calculate the product. Show your work as we did in class.

6) Convert \(-25.28125_{10} \) to its 32-bit IEEE-754 floating point representation.

7) Convert \(-25.28125_{10} \) to its 64-bit IEEE-754 floating point representation.

8) Suppose A, B and C are 32-bit IEEE 754 floating point variables with A having a normalized value of \( 1.11_2 \times 2^{75} \) and B having a normalized value of \( 1.101_2 \times 2^{30} \). After the assignment statement \( "C = A+B" \), why is C’s value equal to A’s value and not the sum?