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Lab 3 – Questions and Answers Concerning this Computer Laboratory Project

1. Binary to Decimal

This result 127 was returned because we added 1100101 (101 in decimal) and 11010 (26 in decimal).

1. Decimal to Binary

a) No, the student will not arrive at the correct result because excel did not correctly carry the digits when we added 1 + 1 in binary.

b) The actual result that the student seeks is 111110100.

1. Bitwise shifting
2. 129 >> 3 = 16
3. 37 << 4 = 592
4. Cryptography: XOR Operations

The answer is 89. This is a result of comparing the bits of 213 and 140. When both bits in the same location = 1, the resulting bit is 0. When one of the bits is 1 and the other is 0, the result is 1. When both bits are 0, the result is 0. Therefore, the resulting binary number of this process is 89.

1. One’s Complement

Complement of 101110000 is 010001111.

010001111 + 101110000 = 111111111 (This is -0 in One’s Complement Binary)