1.

    a)

        0000 0000 0000 0000 0000 0010 0000 0000

    b)

        1111 1111 1111 1111 1111 1100 0000 0001

    c)

        1111 1111 1100 0010 1111 0111 0000 0000

2.

    a)

        -500

    b)

        -1

    c)

        2147483647

3.

    a)

        0111 1111 1111 1111 1111 1111 1111 1010

    b)

        0x CAFE FACE

4.

    5910 is a counter example for both theories, $5910/6 = 985$ and its binary is
    0000 0000 0000 0000 0001 0111 0001 0110 which has 7 ones

5.

    a)

        -1880113152

    b)

        2414854144

    c)

        a load word instruction from memory address 31 + 49152 offset into register 15.