

## **L5 practice problems**

### **2's complement representation**

1. The following are signed numbers in 8-bit 2's complement representation, give their decimal equivalent values:

- a) 0010 0110     38
- b) 0111 1111     127
- c) 1000 0001     -127
- d) 1111 1111     -1

### **Arithmetic overflow**

2. Determine whether arithmetic overflow occurs in each of the following 8-bit 2's complement arithmetic operations:

- a) 11100010 + 01000010     00100100 NO
- b) 01011000 - 10000010     11010110 OF
- c) 01111111 + 00000010     10000001 OF
- d) 11100001 - 11111101     11100100 NO

3. Repeat Q2 using hexadecimal arithmetic and convince yourself that they work the same way.