PES, Section 2.5
Bitwise ops

1. What does the C language statement (0x03 || 0x01) evaluate to?

   True (0x01)

2. Give examples of two 8-bit hexadecimal values x and y such that (x | y) and (x || y) produce the same value.

   x = 0x01; y = 0x01

   (x | y) → (0x01 | 0x01) → 0x01
   (x || y) → (true || true) → true (0x01)

3. Give examples of two 8-bit hexadecimal values x and y such that (x & y) and (x && y) produce different values.

   x = 0x07; y = 0x03;

   (x & y) → (0x07 & 0x03) → (0000 0111 & 0000 0011) → 0000 0011 → 0x03
   (x && y) → (true & true) → true (0x01)

   Note: Multiple solutions are possible

4. Consider the bitwise xor operator ^, e.g. as used in the following C statement:

   z = x ^ y;

   Rewrite the C statement to use the other bitwise operations (&, |, ~), but not ^.

   z = (x & ~y) | (~x & y);