CSE 30 – Bitwise and Number Worksheet

1. Please convert decimal number 56 to 16-bit binary number. Then convert the binary number into a 16 bit hex number

2. Convert 56 to the 2's complement format (assume 16-bit word). Then convert the binary number into a 16 bit hex number

3. Convert 56 to the 2's complement format (assume 16-bit word). Then convert the binary number into a 16 bit hex number

4. What is the value of x after we do the following operations
```
int x = 17;
x >>= 2
```

A. 3   B. 4   C. 17   D. None of the above

5. What is the value of z after we do the following operations
```
unsigned int x = 0x00000011, y = 0xFFFFFFF3;
unsigned int z = x ^ y;
```
A. 0xFFFFFFF1   B. 0x00000003   C. 0x11111113   D. None of the above

6. Write ARM instructions to check if bit 0 and 7 in r0 are both 1, if yes, assign r1 with 1, otherwise, assign r1 with 0. Bit 0 is on the right side of the number.

7. Find the value of the first 13 bits in r0 and assign to r1. Assume the value in r0 is unsigned.
e.g. r0 = 0101 1010 1111 1111 1111 0000 0000 0000
→ r1 will have 0000 0000 0000 0000 0000 1011 0101 1111

8. What will be printed out?
```
int x = 0x12345678;
char* ptr = (char*)(&x);
printf("%02x, %02x, %0x, %02x\n", *ptr, *(ptr+1), *(ptr+2), *(ptr+3));
```