Recitation3 practice

1. Using 4-bit, find the binary representation of 6 in
two's complement
ones' complement
sign-magnitude
as an unsigned 4-bit integer

2. Using 4-bit, find the binary representation of -6 in
two's complement
ones' complement
sign-magnitude

3. Using a 8-bit word, find the binary representation of -6 in
two's complement
ones' complement
sign-magnitude

4. For $w=7$, what are the largest and smallest signed values?

5. For $w=7$, what are the largest and smallest unsigned values?

6. Assume $w = 7$, and convert -13 to unsigned.
This means: represent -13 in 7-bit two's complement and then interpret the
bit pattern as an unsigned integer. Express the result in decimal.

7. Assume $w = 7$, and convert unsigned 53 to signed.

8. Assume $w = 7$, and convert unsigned 103 to signed.

9. Assume that a short is represented by 7 bits and an int is represented by
11 bits.What is the output generated by the following code segment:

```
int x = 357;
int y = -357;
short sx = (short)x;
short sy = (short)y;
printf("%d %d %d %d\n",x, y, (int)sx, (int)sy);
printf("%x %x %x %x\n",x, y, (int)sx, (int)sy);
printf("%u %u %u %u\n",x, y, (int)sx, (int)sy);
```

10.   Using shift and addition/subtraction to express:
x*45 =