1- Base conversion

a) $101100101_2 = 1\times256 + 1\times64 + 1\times32 + 1\times4 + 1\times1$
$= 256 + 64 + 32 + 4 + 1$
$= 357$

b) $101\ 1101\ 0111\ 1010_2 \Rightarrow 5D7A$
5 D 7 A

c) $10111010111010_2 = 56572$
5 6 5 7 2

d) $593_{10} = 1001010001$

e) $6527_{10} = 14577_8$

f) $18107_{10} = 46BB$

g) $365_8 = 11110101$
11 110 101

h) $5022_8 = 2578$

i) $467_8 = 137$

~~$13 \times 16^2 + 7 \times 16^1 + 10 \times 16^0$~~

~~$= 3750$~~

j) $D7A_{16} = 110101111010$

1101 0111 1010

k) $E49F_{16} = 58527$

l) $3G2_{17} = 3 \times 17^2 + 16 \times 17^1 + 2 \times 17^0$

$= 867 + 272 + 2$

$= 1141$

2) The two's component of -68 is:

8 bits: 10111100

16 bits: 1111111110111100

32 bits: 11111111 11111111 11111111 10111100

64 bits: 11111111 11111111 11111111 11111111 11111111 11111111 11111111 10111100

3°) the two's complement of -11

8 bits: 11110101

16 bits: 11111111 11110101

32 bits: 11111111 11111111 11111111 11110101

64 bits: 11111111 11111111 11111111 11111111 11111111 11111111 11111111 11110101

4°) ?

5.) Yes it is possible to play console & mobile games on PC since these are just programs written in low level programing languages like C that is translated into binary code that the computer understand.