Activity 1

1- $1010100011_{(2} \Rightarrow 2^1 + 2^2 + 2^6 + 2^8 + 2^{10} = 2 + 4 + 64 + 256 + 1024 = \boxed{1350}$

$K = 2^{10} - 1 \Rightarrow 1024 - 1 = 511$ ~~512 - 1 = 511~~ $\boxed{1023}$

$1350 - 1023 = 227_{(10}$

2- $01\underbrace{10110101000110}_{\text{Mantissa}}$

$K = 2^{(5-1)} - 1) = 16 - 1 = 15 + 14 = 19_{(10} \Rightarrow \overbrace{10011}^{\text{Exponent}}$

Exponent

$0\ \overbrace{10011}\ \underbrace{1011010100}_{\text{Mantisa}}$ ← Aproximation mantissa is more long but IEEE 16 bit = 1 bit signal, 5 bits exponent, 10 bits mantisa

↑ sign

3- $FAC_{(16} \Rightarrow 111{,}1\ 10{,}10\ 1{,}100_{(2} \Rightarrow 7654_{(8}$

for ~~obtain~~ obtain decimal, ~~convert~~ convert F to 4bits 1111, A to 1010 and C to 1100

for obtain octal, convert 100 to 4, 101 to 5, 110 to 6 and 111 to 7

to obtain 32bit in octal change 3 zeros to one 0 left to complete the bits