Question 3

part b2
Running time complexity of the recursive exponentiation by squaring algorithm is O((n log x) ^k)

part b3
Some base raised to the expoent 63 using this method would 6 multiplication operations. This because multiplication operation need to be carried out only for every 1 in the base 2 represntation of the exponent. Since bin(63) = 111111, we can do some simple addition. 1+1+1+1+1+1=6.