Challenge Activity 5 – Regular Expressions

Consider the following regular expression: (01+10)(01+10)*

(a) Prove using the induction method that all the strings belonging to L((01+10)(01+10)*) have an equal number of 0's and 1's;

(b) The language L((01+10)(01+10)*) does not include all the strings over ∑={0,1} with an equal number of 0's and 1's. Comment on the possibility to have a regular expression representing the language of strings over ∑={0,1} with an equal number of 0's and 1's.