Challenge Activity 7 – Regular Languages

Calvin needs to prove, using the Pumping Lemma, that the language of the palindromes in the alphabet consisting of the ASCII symbols is not a regular language.

Hobbes suggested that he can prove it by proving that $L = \{1^n21^n \mid n \geq 0\}$ is not a regular language.

Calvin is with doubts that the prove suggested by Hobbes is valid, as he thought about the regular language $L((a+b)^*)$ and that using the Pumping Lemma for $L = \{a^nb^n \mid n \geq 0\}$ (a language consisting of string belonging to $L((a+b)^*)$) would conclude wrongly that $L((a+b)^*)$ is not a regular language.

(a) Do you think that Hobbes is right or wrong? Justify your answer.
(b) What is wrong with the thoughts of Calvin concerning the suggestion of Hobbes?