

We say that a function is in the class \mathcal{NC} if the function can be computed in polylogarithmic time by polynomially many processors.

At the start of the computation of such a function, each symbol of the input string could be read by a different processor, and at the end, each symbol of the output string could be written by a different processor.

True/False Questions, Part III

1. True or False. T = true, F = false, and O = open, meaning that the answer is not known science at this time. In the questions below, \mathcal{P} and \mathcal{NP} denote \mathcal{P} -TIME and \mathcal{NP} -TIME, respectively.
 - (lxxxix) **F** If a computable sequence of fractions converges to x , then x must be a recursive real number.
 - (xc) **F** If L is a recursively enumerable language, there must be a computable reduction of L to the halting problem.
 - (xci) **F** If two context-free grammars are equivalent, there is must be a proof that they are equivalent.
 - (xcii) **T** If two context-free grammars are not equivalent, there is must be a proof that they are not equivalent.
 - (xciii) **T** The membership problem for any regular language is \mathcal{NC} .
 - (xciv) **T** Given any sequence $M_1, \dots M_n$ of square Boolean matrices, the product $M_1 \times M_2 \times \dots \times M_n$ is \mathcal{NC} computable.
 - (xcv) **T** The problem of determining whether a given integer is a square is \mathcal{NC} .
 - (xcvi) **F** The set of all real numbers which are limits of convergent sequences of fractions is countable.
 - (xcvii) **T** $\sqrt{2}$ is a recursive real number.
 - (xcviii) **F** Let x be a real number whose decimal digits are all either 0 or 1. then x must be a redursive real number.
 - (xcix) **T** Every context-sensitive language is decidable.
 - (c) **F** \mathcal{P} -TIME = EXP-TIME.
 - (ci) -----
 - (cii) -----