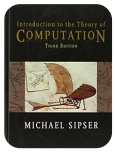
Exercício 1

Capítulo 5, Página 239



Introduction to the Theory of Computation

ISBN: 9781133187790

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Solução Certificado

Passo 1 1 de 2

We will reduce the ALL_{CFG} to EQ_{CFG}.

For the sake of contradiction, let's assume that EQ_{CFG} is decidable and let R be a TM that decides it.

We will construct a CFG G' such that $L(G') = \Sigma^*$ and use it alongside R to compare the given grammar G with G' and if they are equal, ALL_{CFG} should accept.

We want G' to be:

$$S \Rightarrow xS|\varepsilon, \forall x \in \Sigma$$

And now we construct a decider for ALL_{CFG}:

- Submit $\langle G, G' \rangle$ to R
- If it accepts, accept. If it rejects, reject.

Since we got a decider for ALL_{CFG}, we got a contradiction.

Therefore, EQ_{CFG} is undecidable.

Resultado 2 de 2

Reduce ALL_{CFG} to EQ_{CFG}.

Avaliar esta solução

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