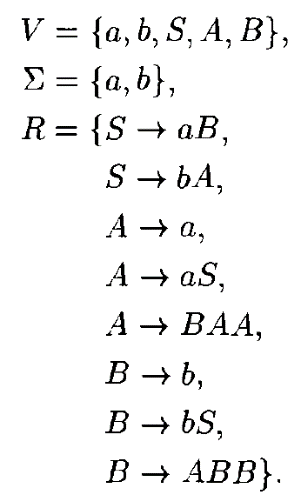
1. Consider the context free grammar , where

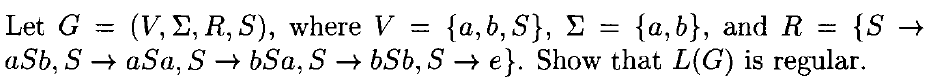


Show that .

1. Construct context-free grammars that generate each of these language

a).

b).



1. Show that the following languages are context-free by exhibiting contextfree grammars generating each:
2. .

A: i) .

1. Use Pumping theorem to show the followings are not context-free:

a).

b).

c).

d).

e).

A:

1. Determine whether the following statement is correct or wrong, and state your reason.

a). Language { : *n* ≥ 0, *m* ≥ 0, *p* ≥ 0} is regular.

b). ***A*** and ***B*** are two context-free languages, so is ***A***⊕***B***, where

***A***⊕***B*** =(***A***−***B***)∪(***B***−***A***).

Q: what if I replace context-free with regular?

c). Language is context free.

d). Language is not context-free.

e). The concatenation of a context-free language and non-context-free language is non-context-free.

Text

Description automatically generated