

1. Hvað er mál?

A) Mengi strengja

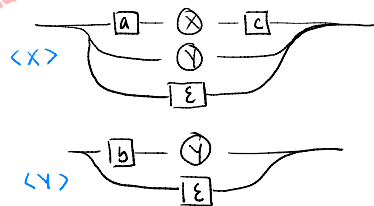
2. Snið BNF, EBNF og málrit fyrir eftirfarandi mál.

a) $\{a^n b^k c^n \mid n, k \in \mathbb{N}\}$

BNF

$\langle x \rangle := a \langle x \rangle c$
| $\langle y \rangle$
| ϵ
 $\langle y \rangle := b \langle y \rangle$
| ϵ

Málrit



EBNF

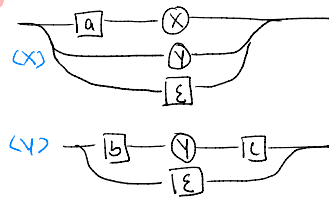
$X = \{a, x, c\} \mid y \mid \epsilon$
 $Y = \{b, y\} \mid \epsilon$

b) $\{a^k b^n c^n \mid n, k \in \mathbb{N}\}$

BNF

$\langle x \rangle := a \langle x \rangle$
| $\langle y \rangle$
| ϵ
 $\langle y \rangle := b \langle y \rangle c$
| ϵ

Málrit



EBNF

$X = \{a, x\} \mid y \mid \epsilon$
 $Y = \{b, y, c\} \mid \epsilon$

c) $\{a^n b^n c^n \mid n \in \mathbb{N}\}$

Ömögulegt.

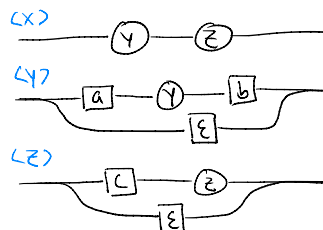
Engin leið að vera með
réttan fjölda stafa í réttari
röð.

d) $\{a^n b^n c^k \mid n, k \in \mathbb{N}\}$

BNF

$\langle x \rangle := \langle y \rangle \langle z \rangle$
 $\langle y \rangle := a \langle y \rangle b$
| ϵ
 $\langle z \rangle := c \langle z \rangle$
| ϵ

Málrit

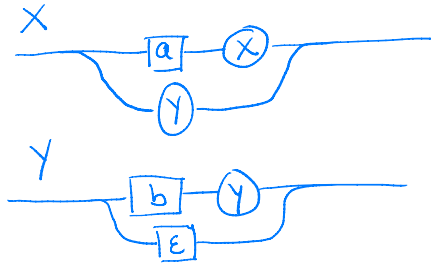


EBNF

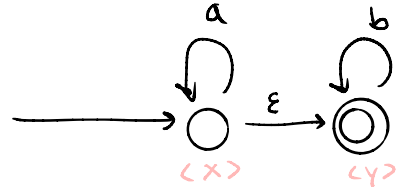
$X = y, z$
 $Y = \{a, y, b\} \mid \epsilon$
 $Z = \{c, z\} \mid \epsilon$

3. Þetta mál skilgreinir alla strengi sem innihalda fyrst runu af 0-∞ 'a' og síðan 0-∞ 'b'.

Málinn væri þú:



(bragðgeng)
Og stöðuvél:



$$\{a^n b^k \mid n, k \in \mathbb{N}\}$$