

**SoSe 2022**

**Introduction to Formal Semantics**

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**Exercise sheet n.4**

Total points -/25

**Note.** Are there questions you would like to discuss during the tutorial? If yes, please send them to me (n.dascalu@lsv.uni-saarland.de) so that we can go through them together.

**Exercise 1** (-/5)

Represent a matrix as a CHARACTERISTIC FUNCTION and as a RIGHT-TO-LEFT CURRIED FUNCTION.

$f_{\text{LOVE}} = \{\langle \text{bonnie}, \text{clyde} \rangle, \langle \text{clyde}, \text{bonnie} \rangle, \langle \text{susan}, \text{megan} \rangle\}$

$f_{\text{LOVE}} = \text{Type: ???}$

**Exercise 2** (-/10)

Translate the following sentences from types into lambda abstractions:

e.g. sentence : type  $\mapsto$  lambda abstraction

Underlined: read it as one element;

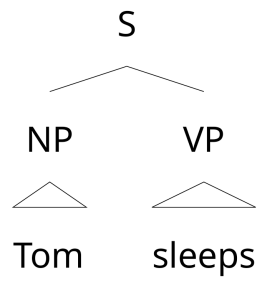
- (1) Mary loves herself.
- (2) All philosophers are evil.
- (3) John likes cats.
- (4) Cloe gave Mark the keys.
- (5) Yoda floats.
- (6) Anakin is Luke's father.
- (7) Some bagels are gluten free.
- (8) Eddie lives in Seattle.
- (9) Old man.
- (10) Someone's thirsty.

**Exercise 3** (-/10)

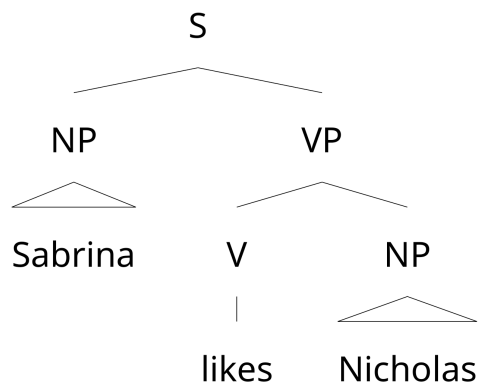
For each tree provide its (a) type, (b) lambda-abstraction, and (c) proceed bottom up with lambda-reduction:

- (1) Tom sleeps.
- (2) Sabrina likes Nicholas.
- (3) Some birds fly.

(1)



(2)



(3)

