

Name _____

Terminals: () λ . $a b c d$

$\langle \text{LcExp} \rangle ::= \langle \text{Identifier} \rangle \mid$
 $(\lambda \langle \text{Identifier} \rangle . \langle \text{LcExp} \rangle) \mid$
 $(\langle \text{LcExp} \rangle \langle \text{LcExp} \rangle)$

$\langle \text{Identifier} \rangle ::= a \mid b \mid c \mid d$

Prove $((\lambda a. a) (\lambda b. b))$ is in the language by drawing a derivation tree.

Explain in words why $(\lambda (\lambda b. b). a)$ is not in the language.

$\langle \text{bufflist} \rangle ::= (\{ \langle \text{id} \rangle \{, \}^+ \}^*)$

$\langle \text{id} \rangle ::= x \mid y$

| input | Is it a bufflist? |
|-----------------|-------------------|
| () | |
| (x ,, y ,,,) | |
| (x , y , y ,) | |
| (x y) | |
| (y , x) | |