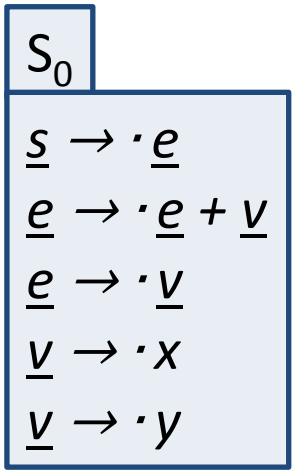
Example of constructing an LR(0) automaton

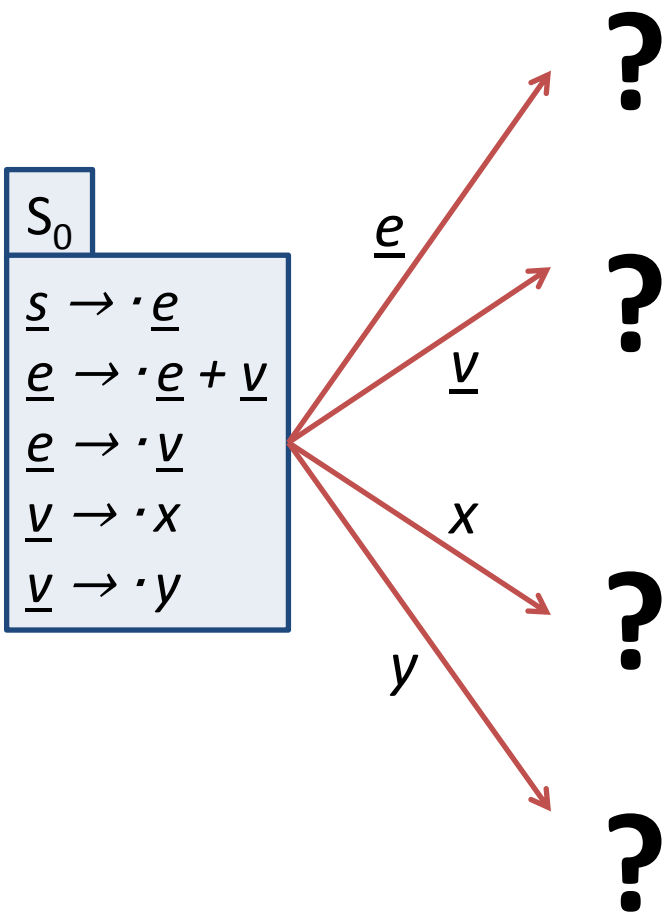
Grammar

$\underline{s}$	$\rightarrow$	$\underline{e}$
$\underline{e}$	$\rightarrow$	$\underline{e} + \underline{v}$
	/	$\underline{v}$
$\underline{v}$	$\rightarrow$	x
	/	y

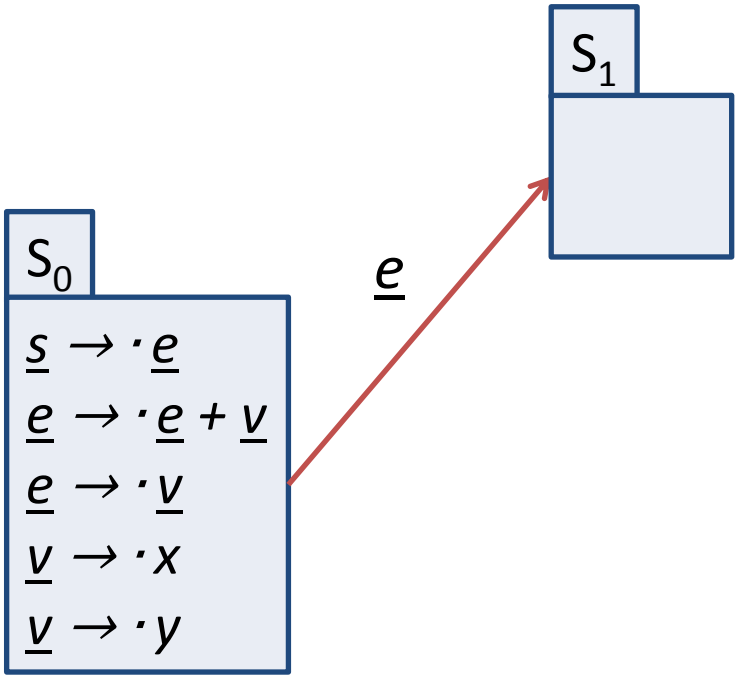
CLOSURE({ s → ·e })


S_0
$s \rightarrow \cdot e$
$e \rightarrow \cdot e + v$
$e \rightarrow \cdot v$
$v \rightarrow \cdot x$
$v \rightarrow \cdot y$

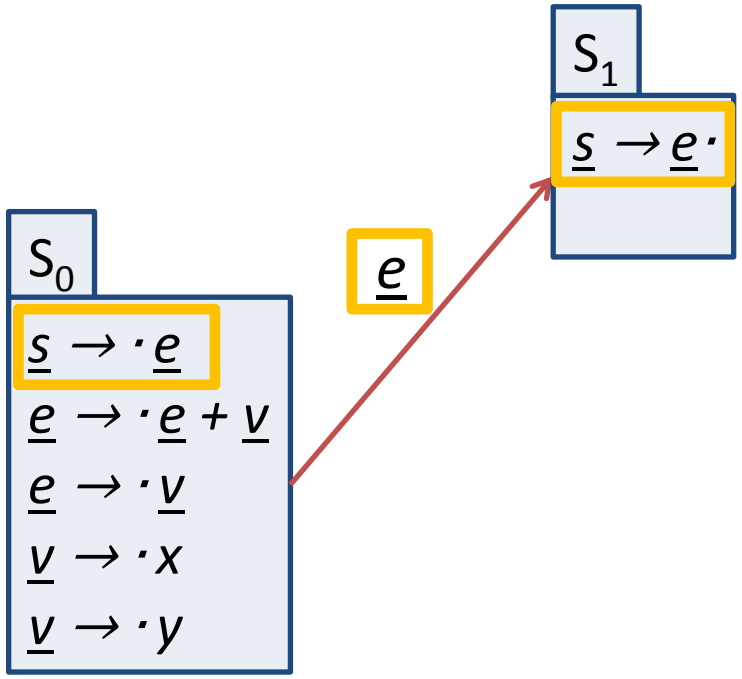
Question 1



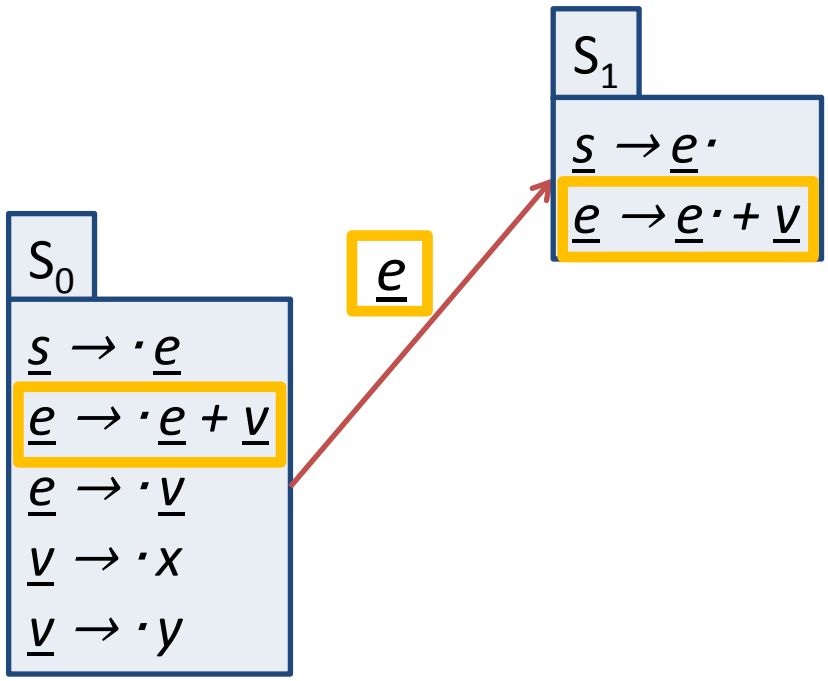
Compute *GOTO*(S_0, $\underline{e}$)



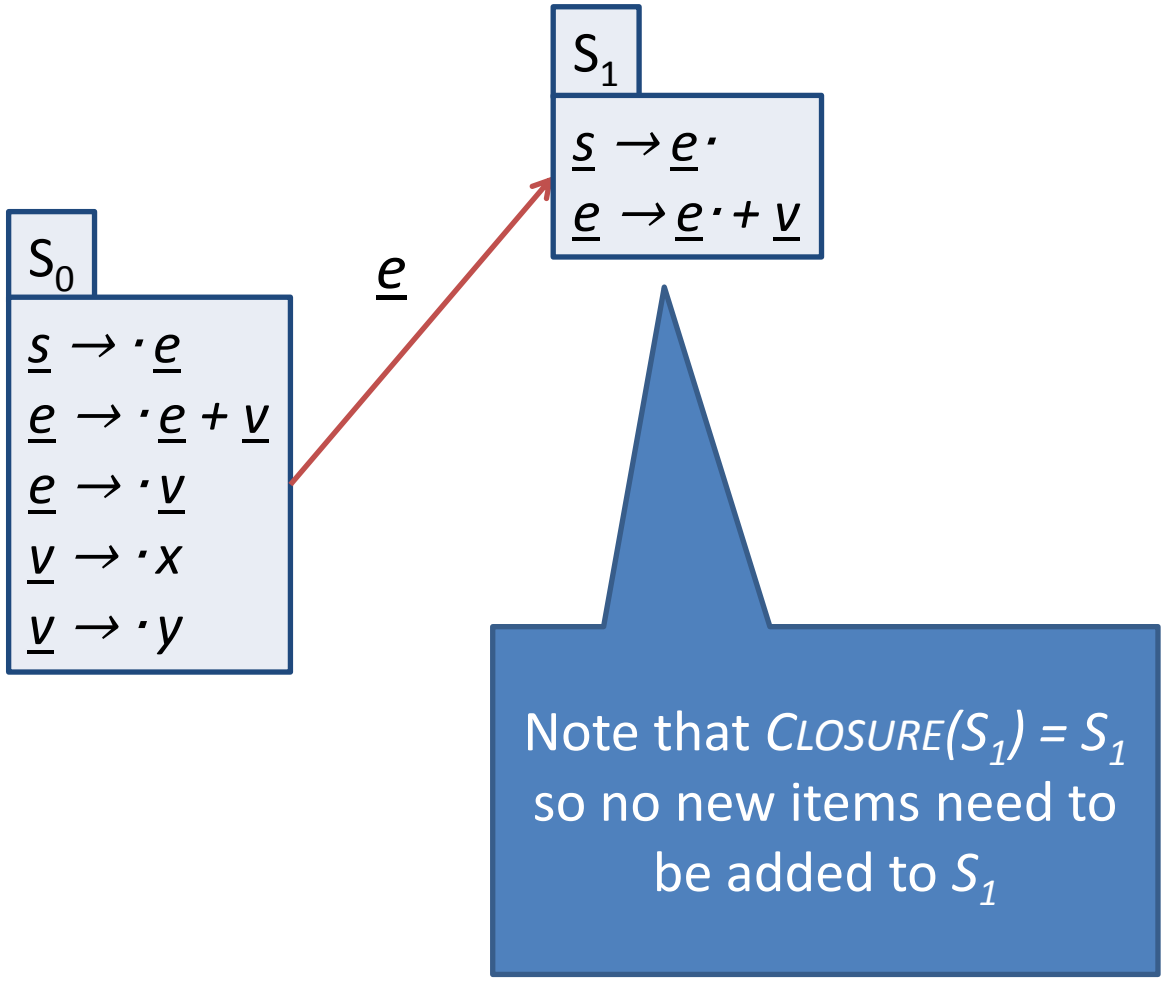
Compute *GOTO*(S_0, $\underline{e}$)



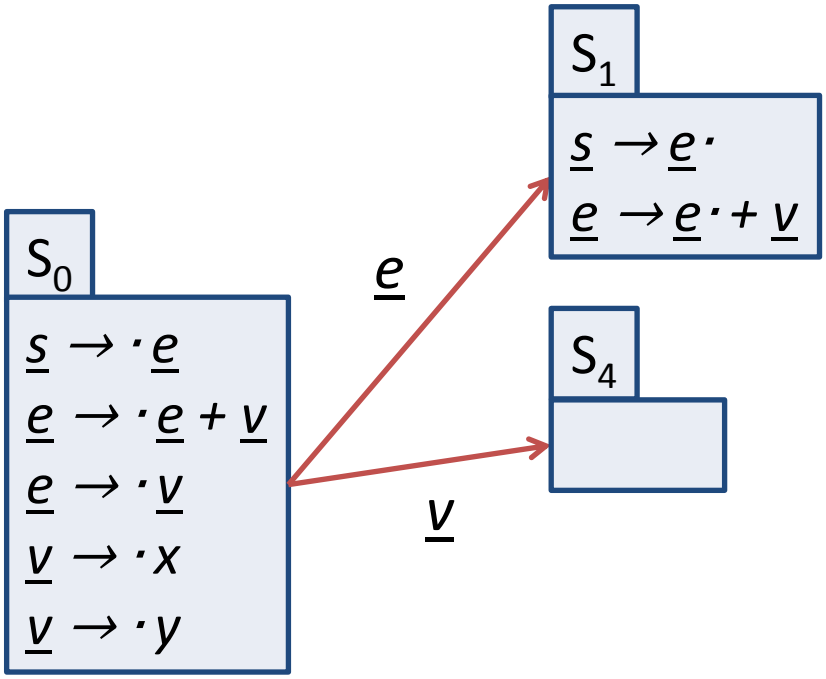
Compute *GOTO*(S_0, $\underline{e}$)



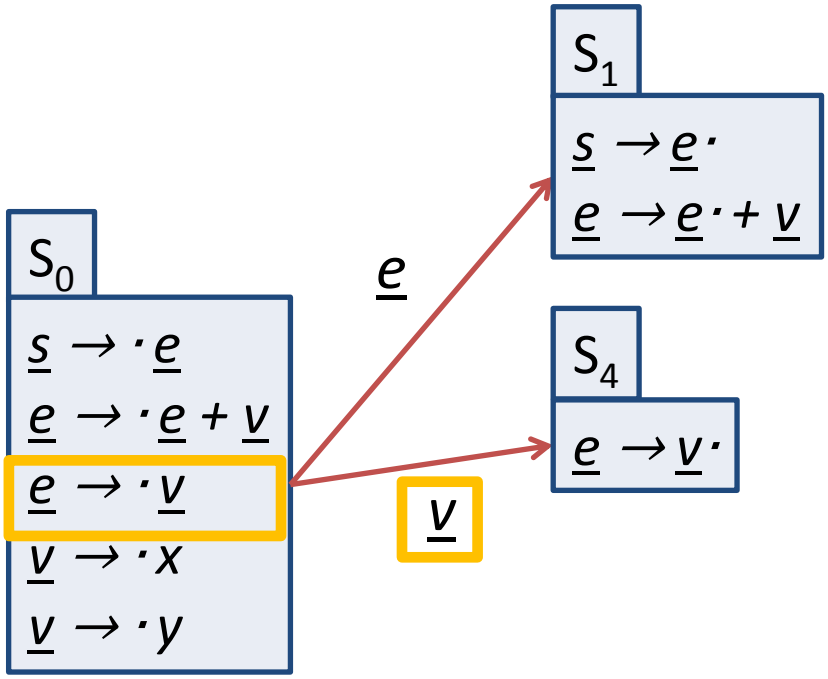
Compute *GOTO*(S_0, $\underline{e}$)



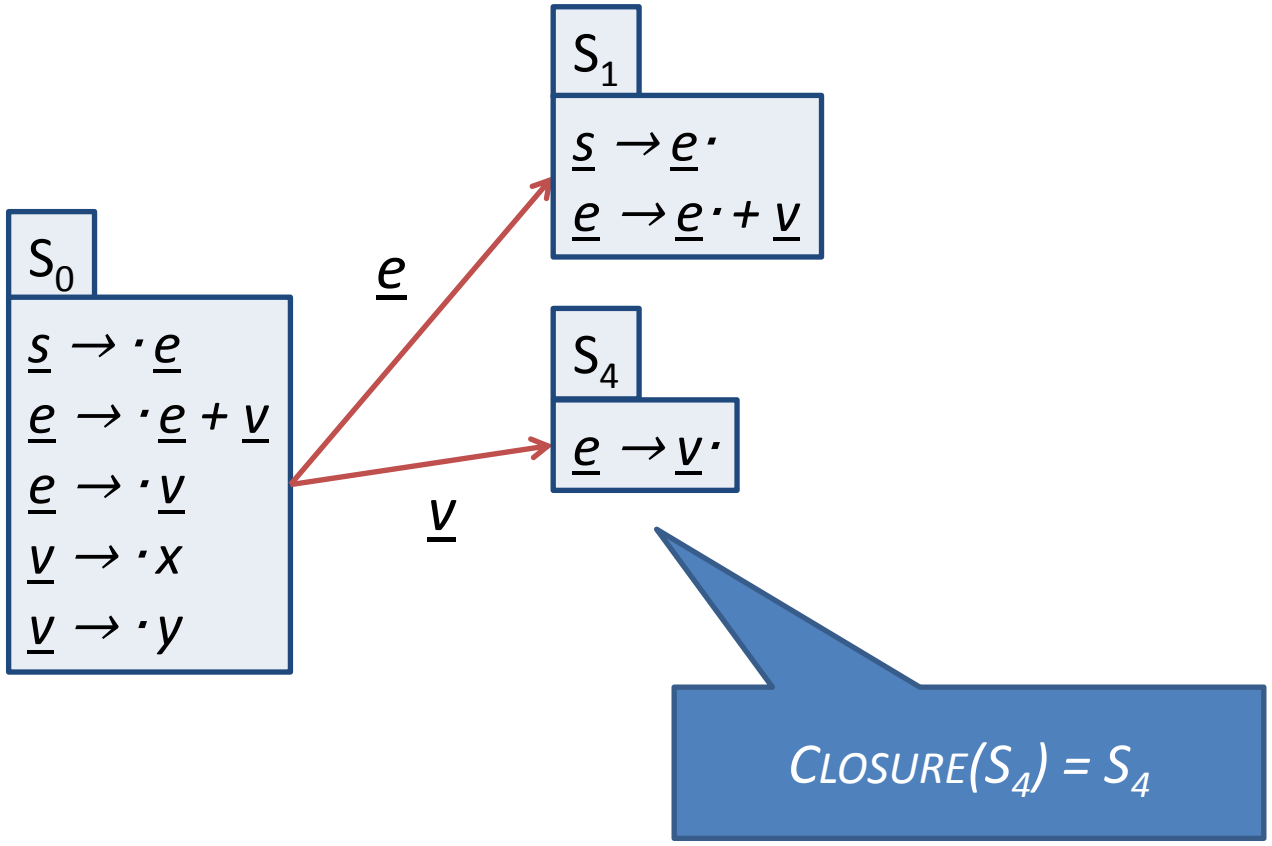
Compute *GOTO*(S_0, $\underline{v}$)



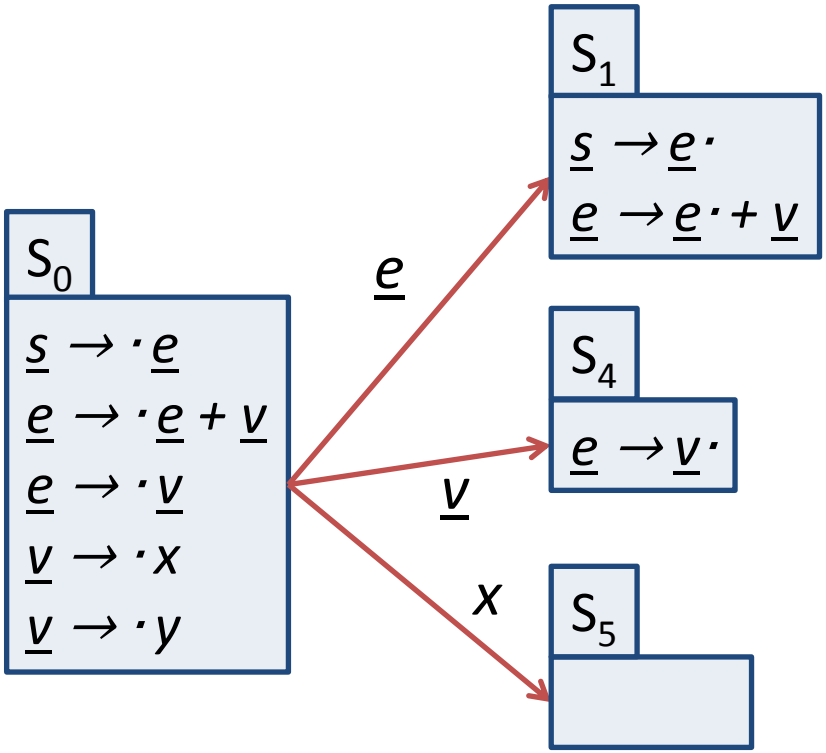
Compute *GOTO*(S_0, $\underline{v}$)



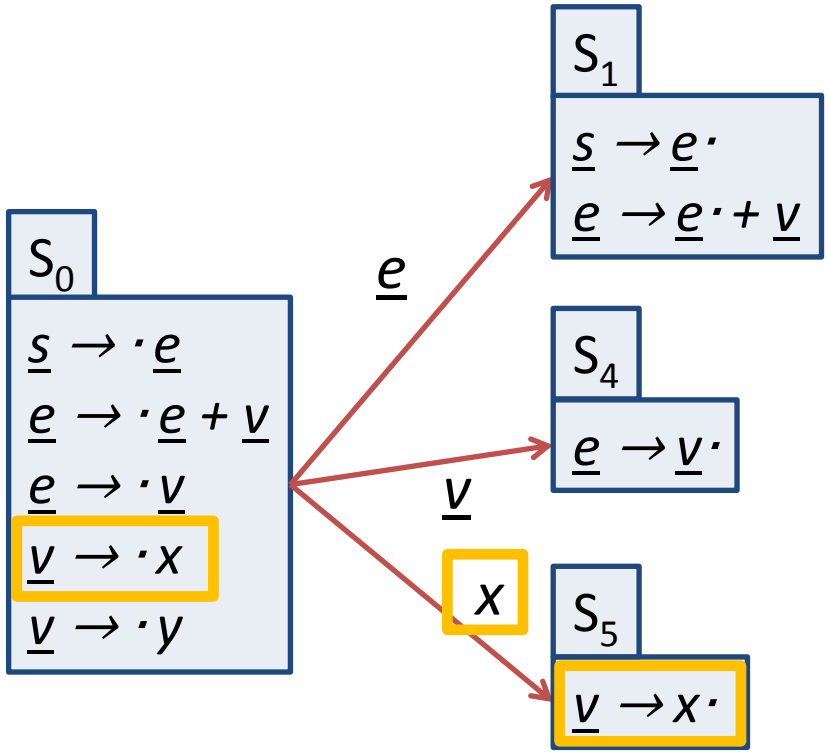
Compute *GOTO*(S_0, $\underline{v}$)



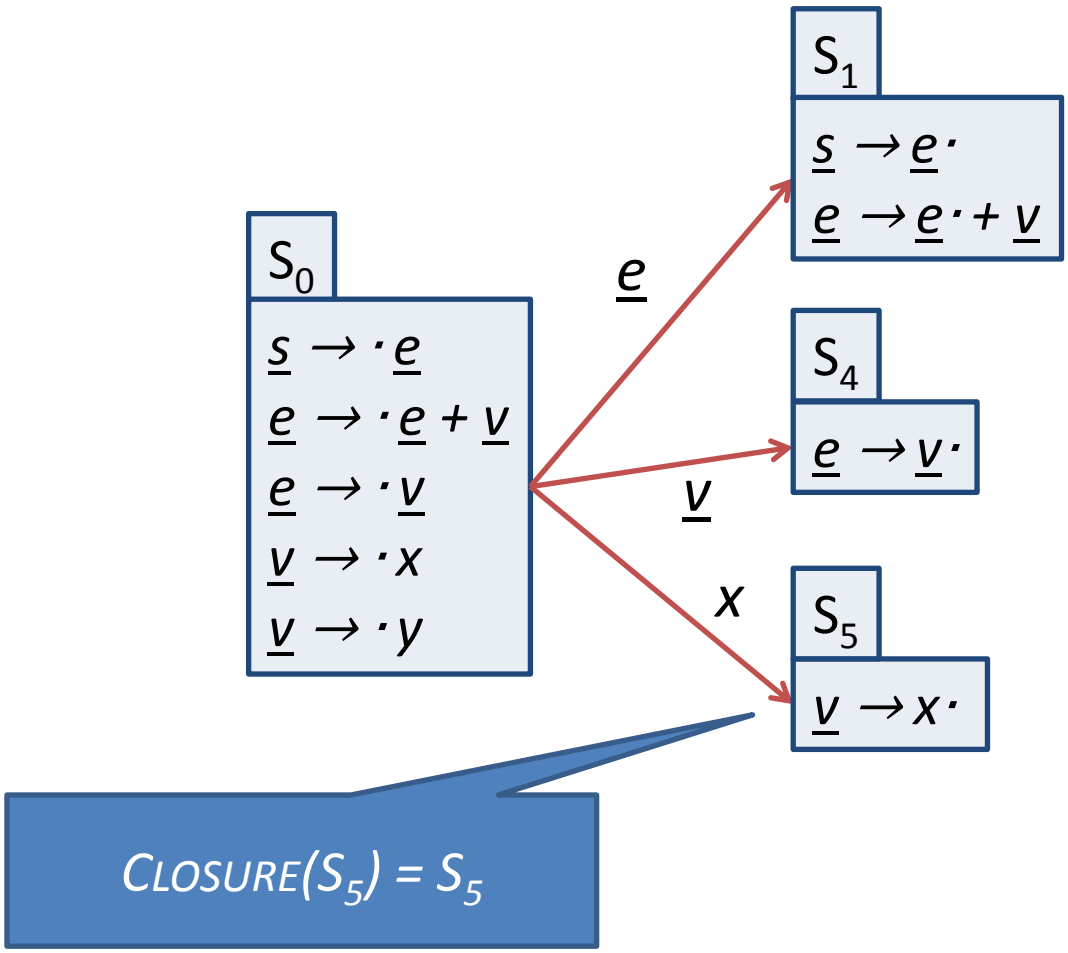
Compute *GOTO*(S_0, *x*)



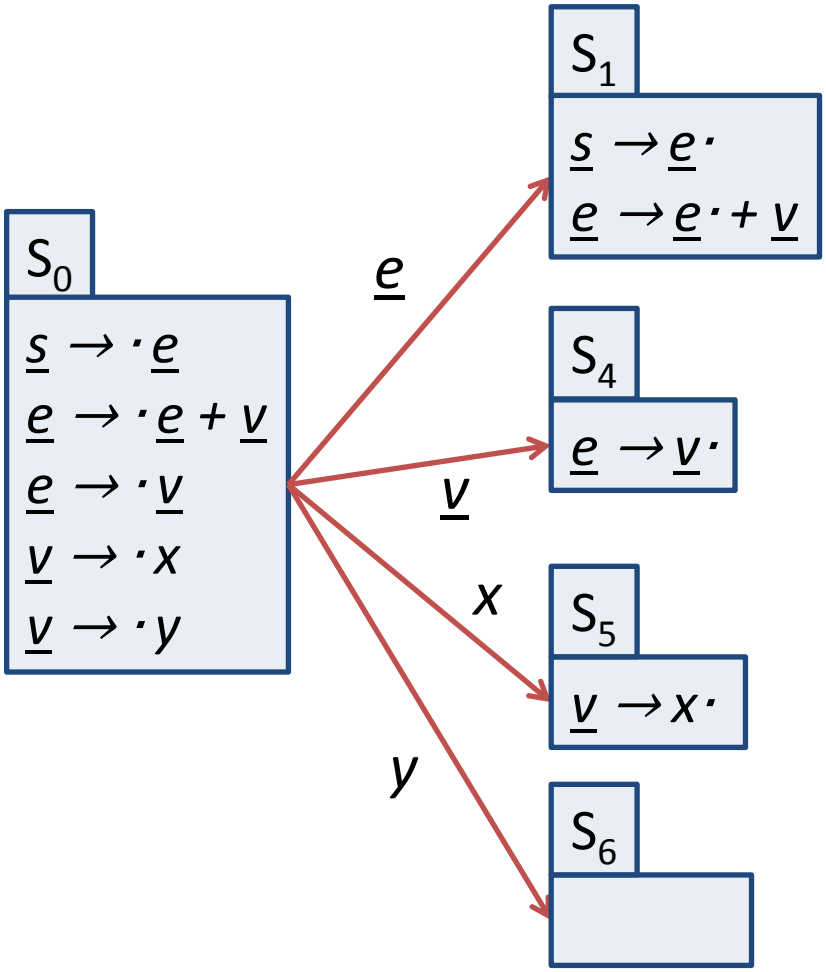
Compute *GOTO*(S_0, *x*)



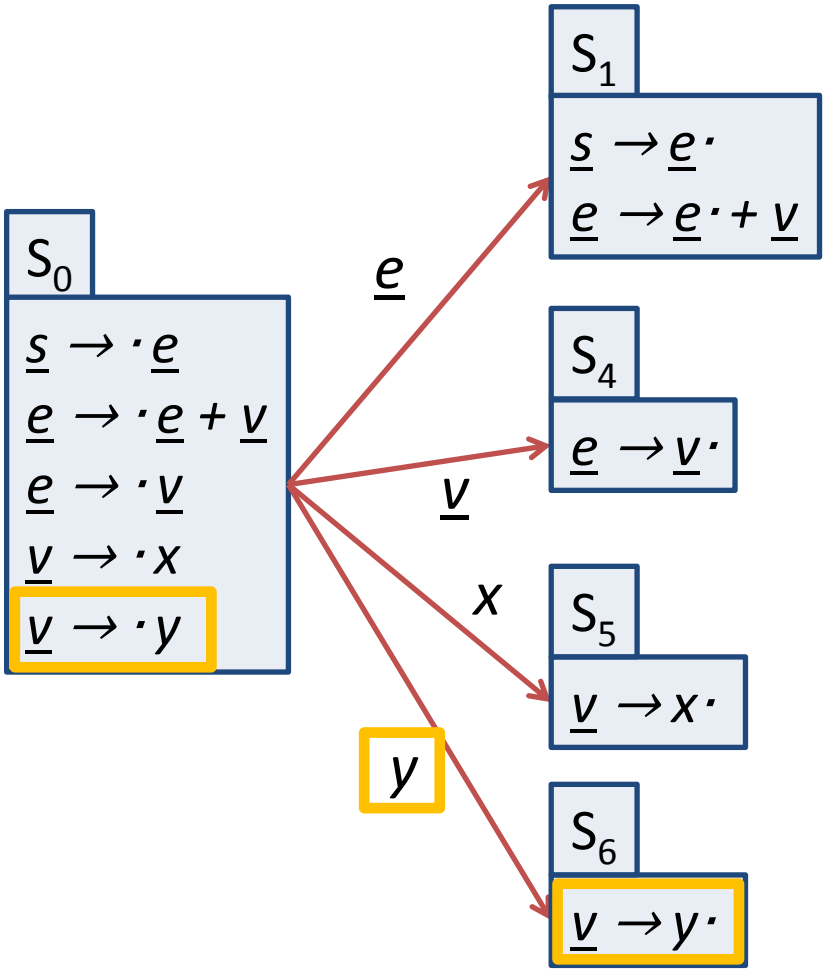
Compute *GOTO*(S_0, *x*)



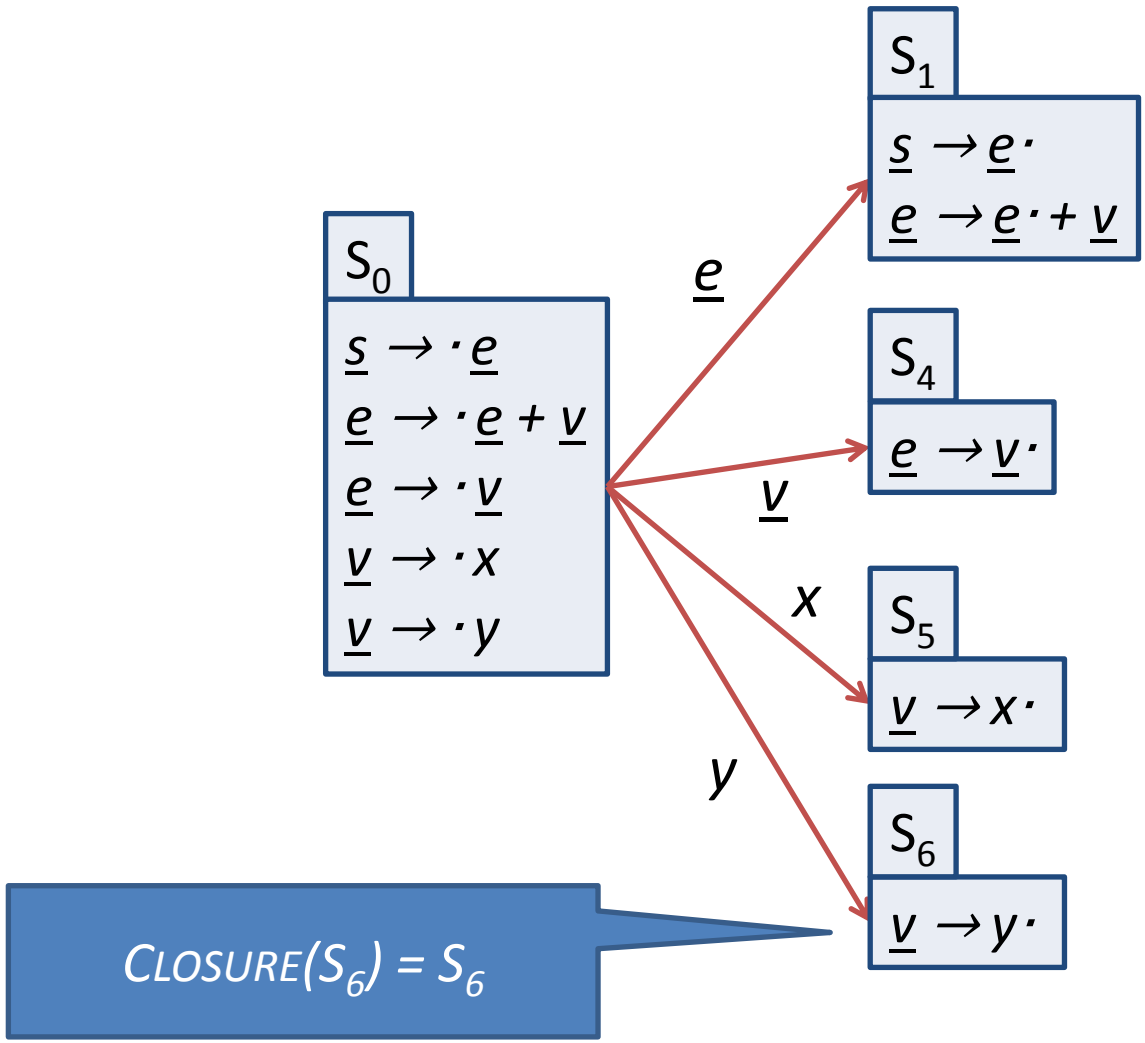
Compute *GOTO*(S_0, *y*)



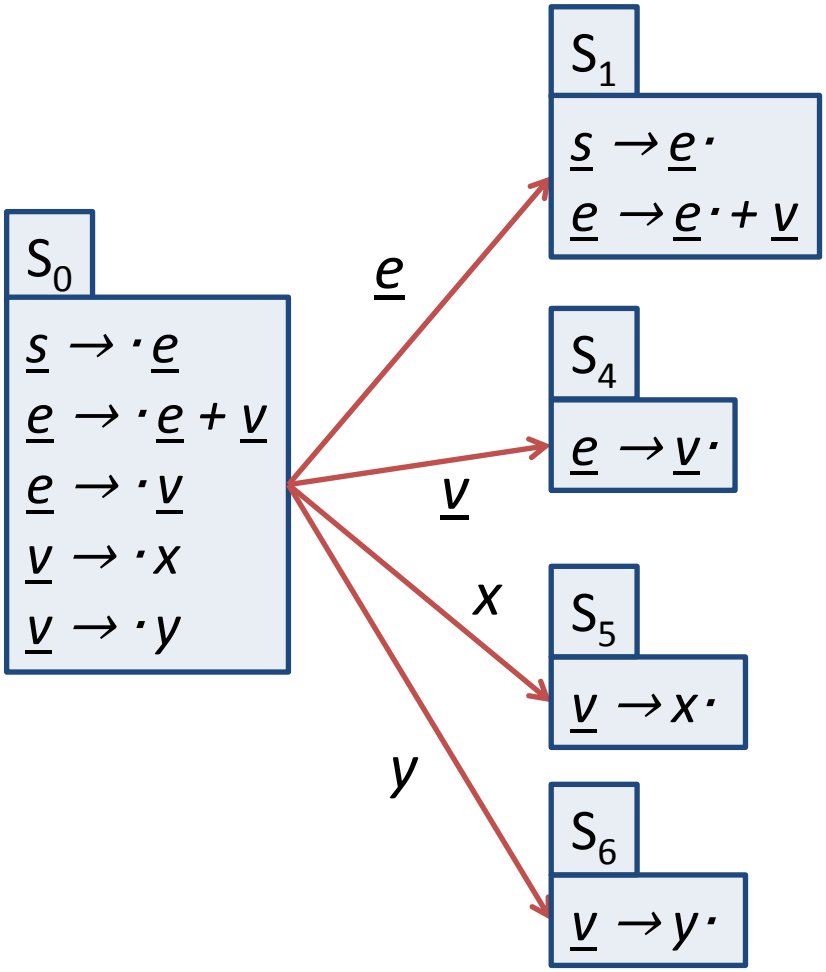
Compute *GOTO*(S_0, *y*)



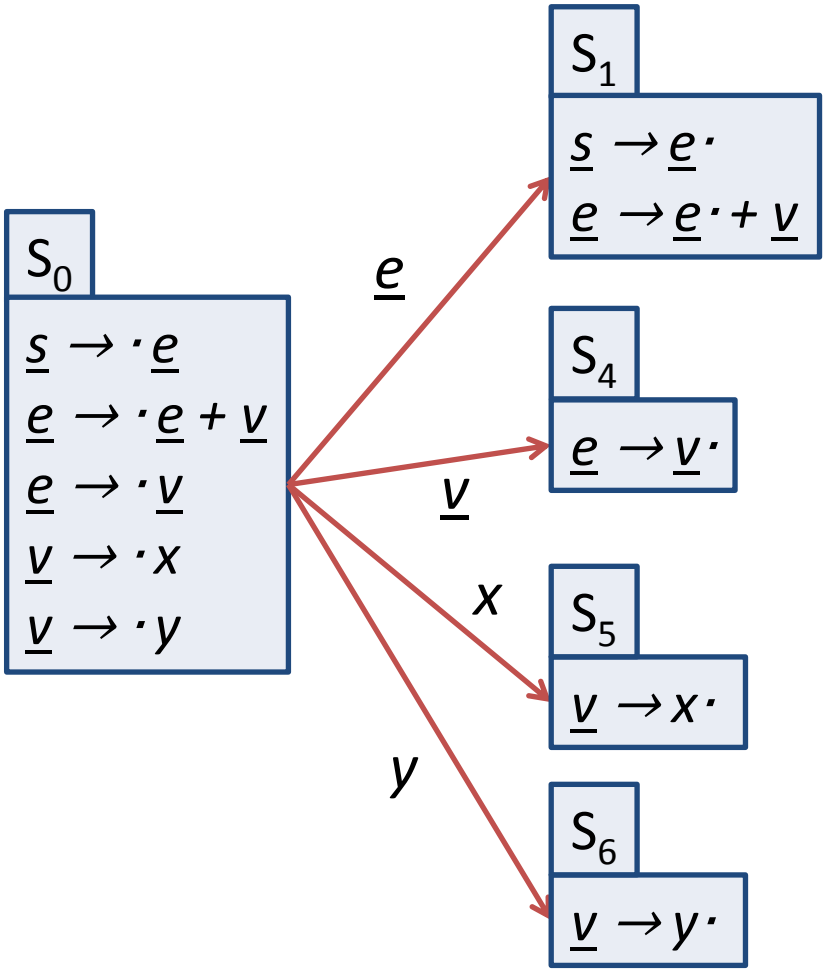
Compute *GOTO*(S_0, *y*)



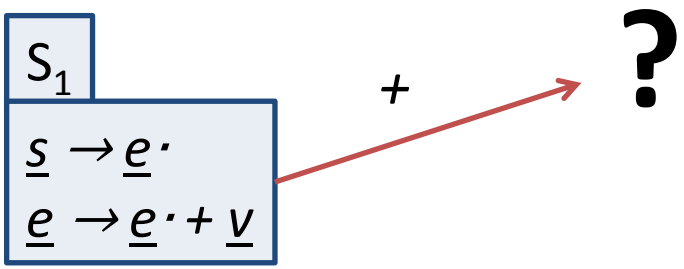
Compute *GOTO*(S_0, *y*)



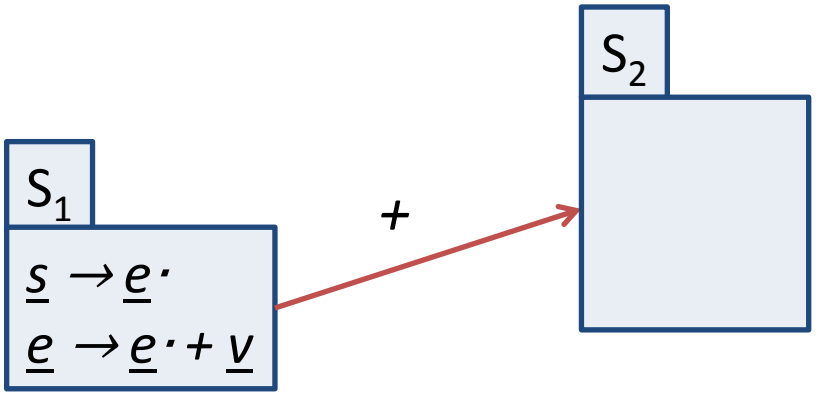
All states reachable from S_0



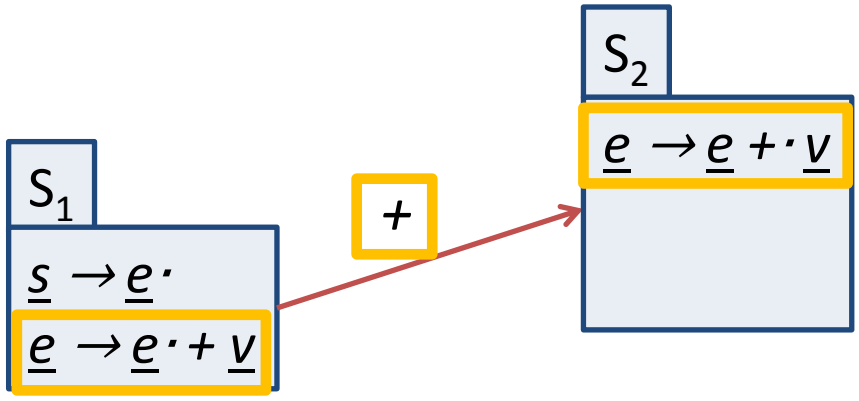
Question 2


S_1
$\underline{s} \rightarrow \underline{e}\cdot$
$\underline{e} \rightarrow \underline{e}\cdot + \underline{v}$
+
?

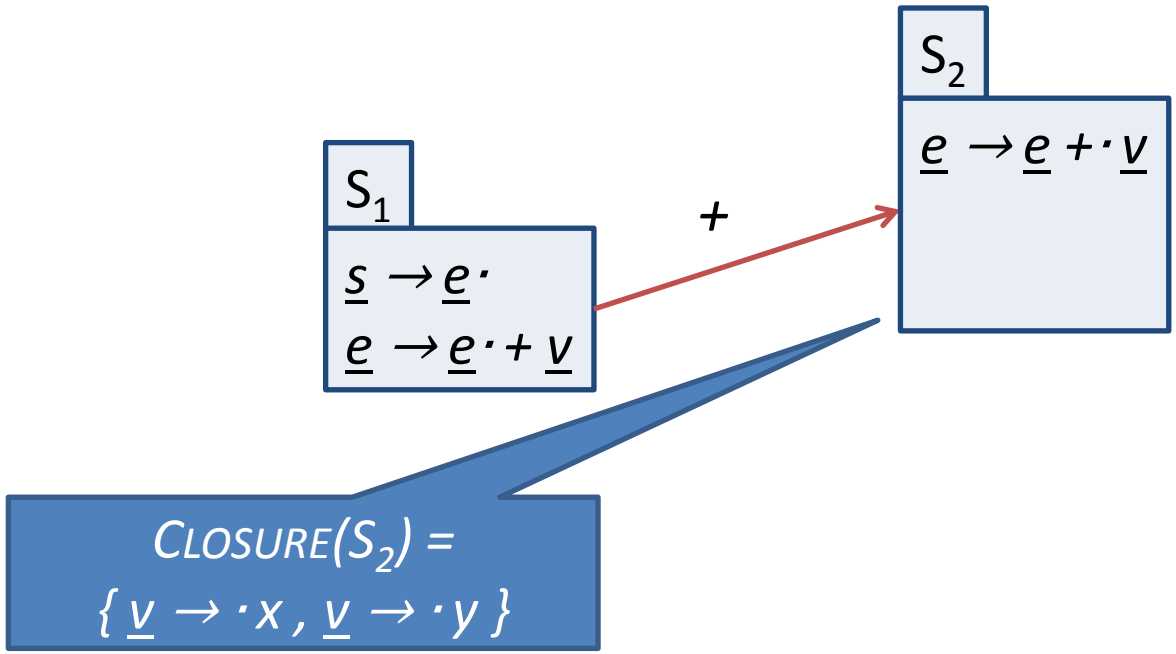
Compute *GOTO*(S_1, +)



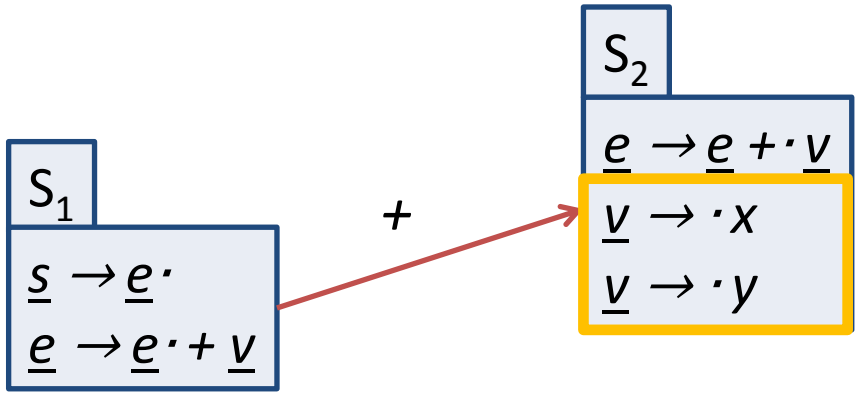
Compute *GOTO*(S_1, +)



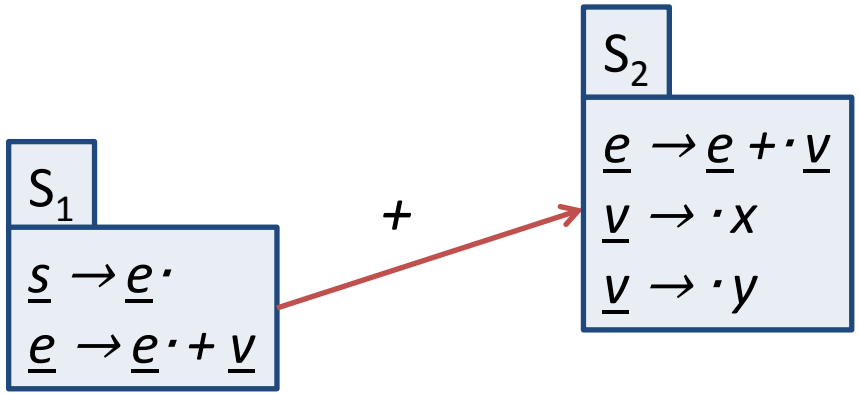
Compute *GOTO*(S_1, +)



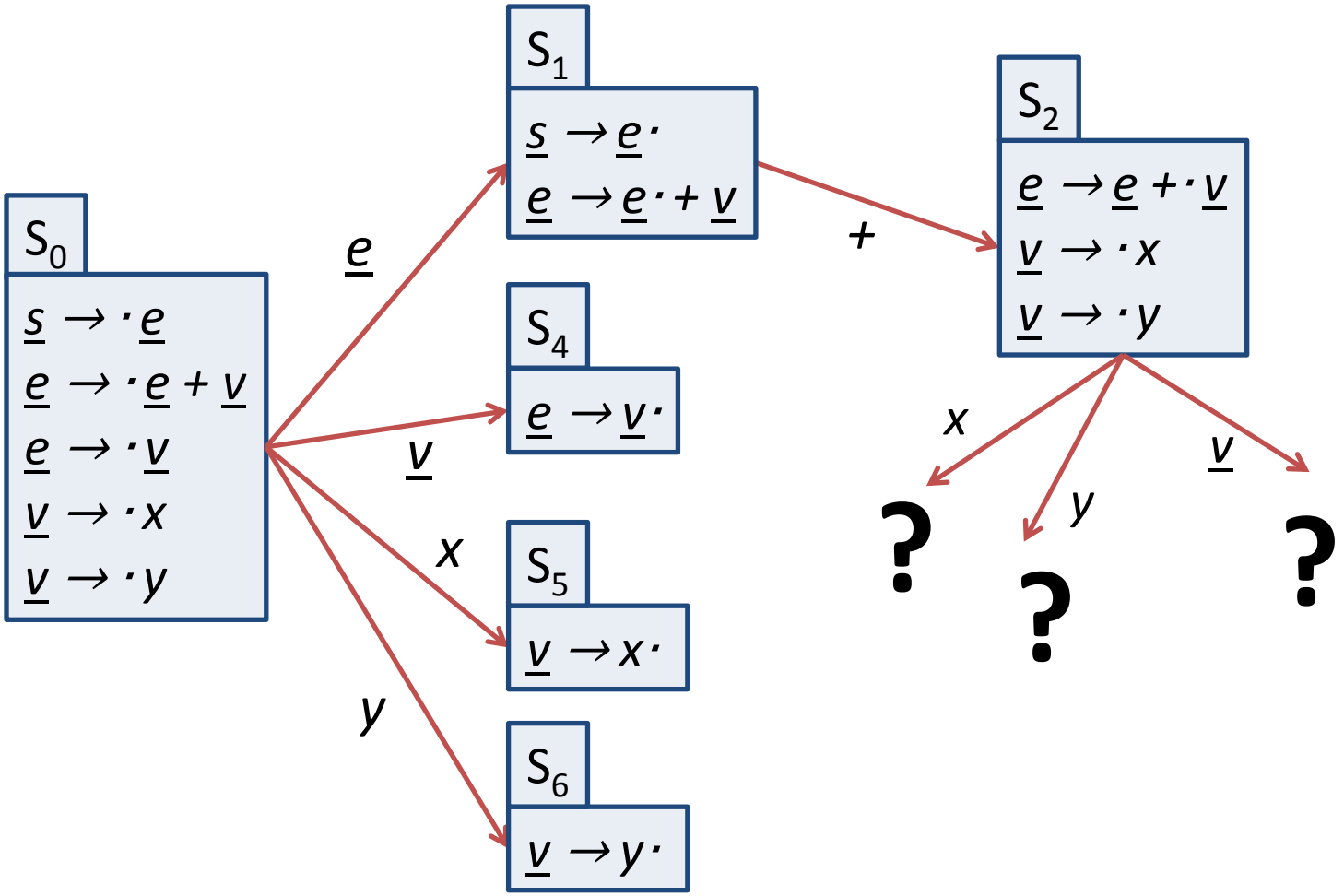
Compute *GOTO*(S_1, +)



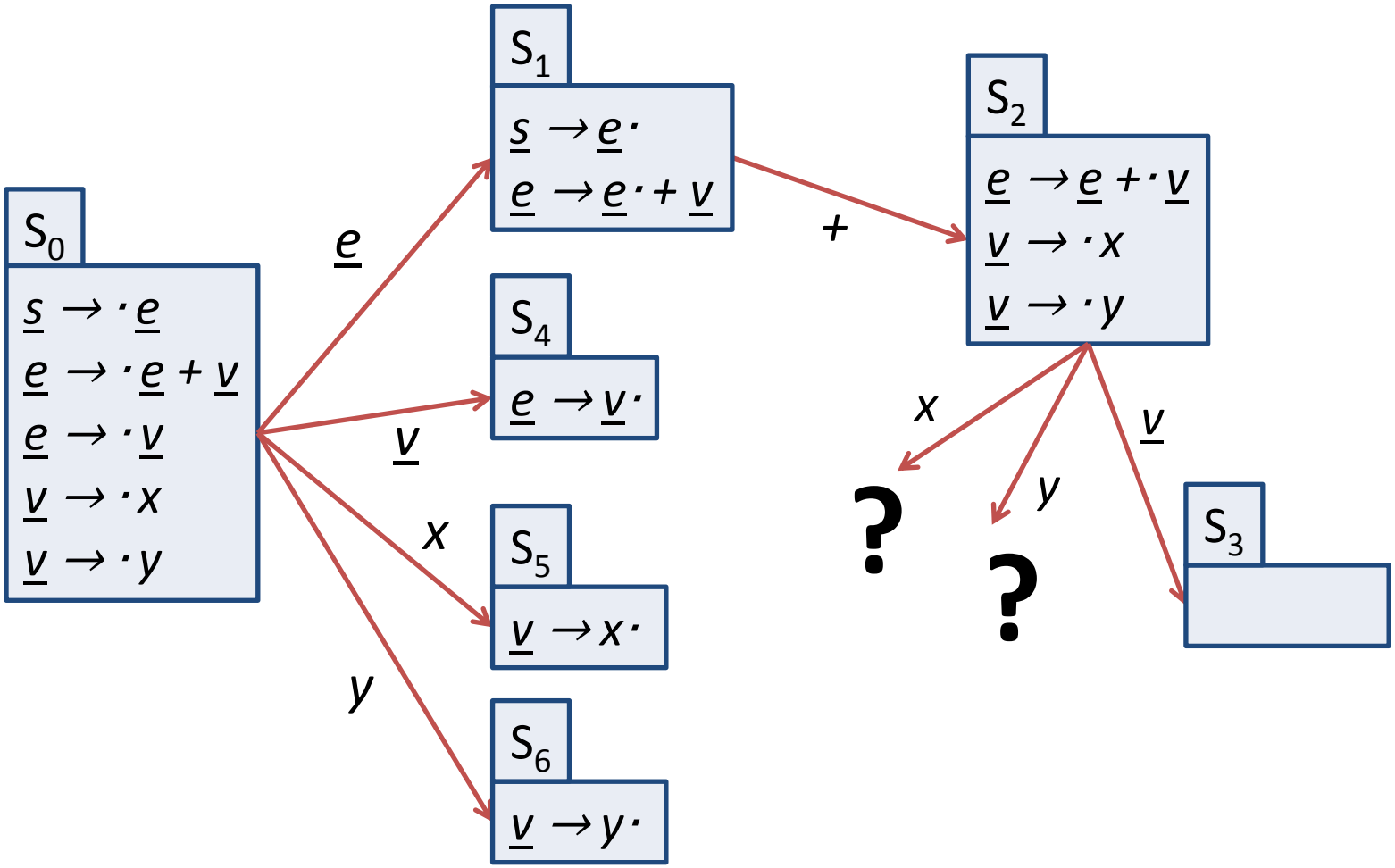
All states reachable from S_1



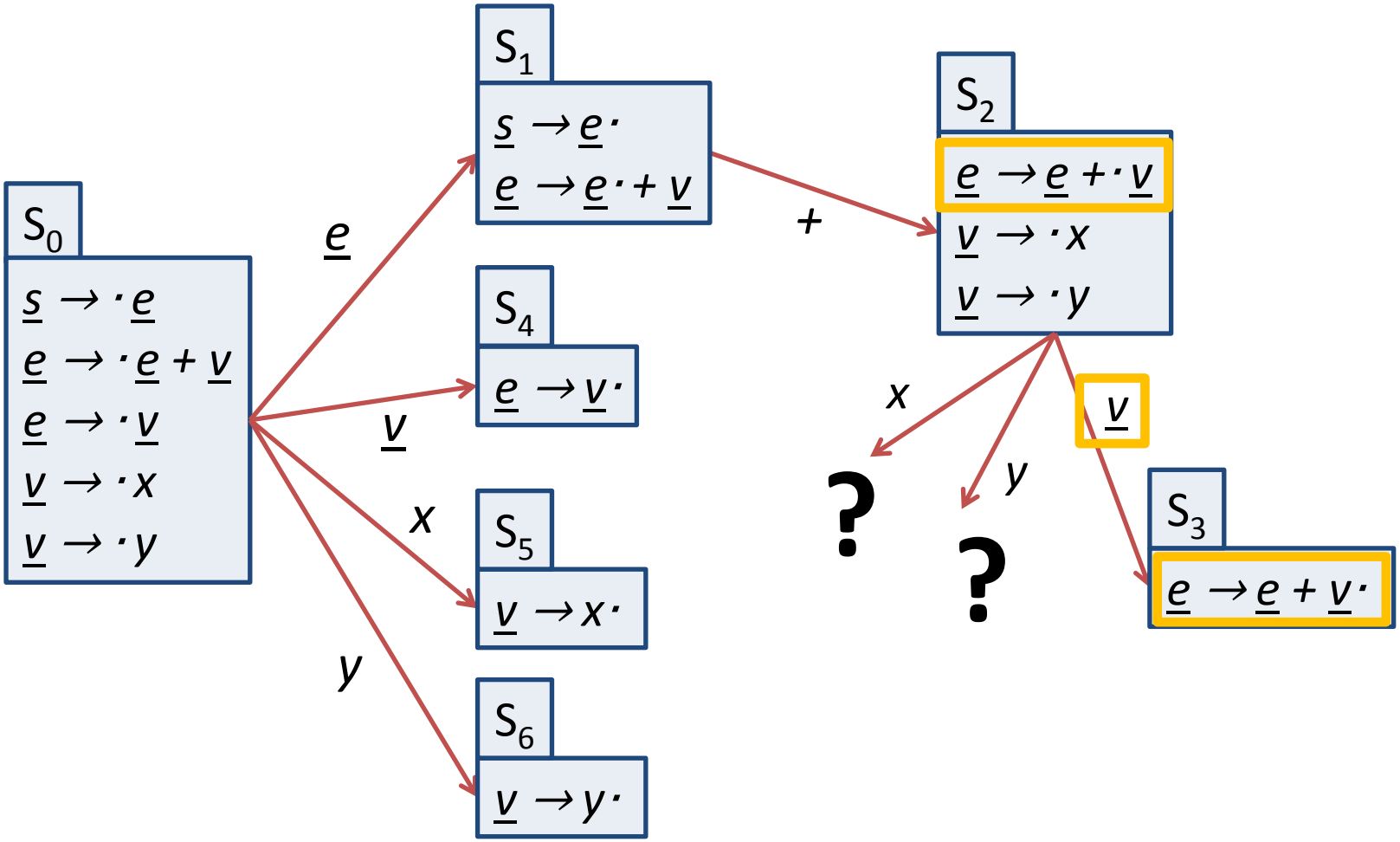
Question 3



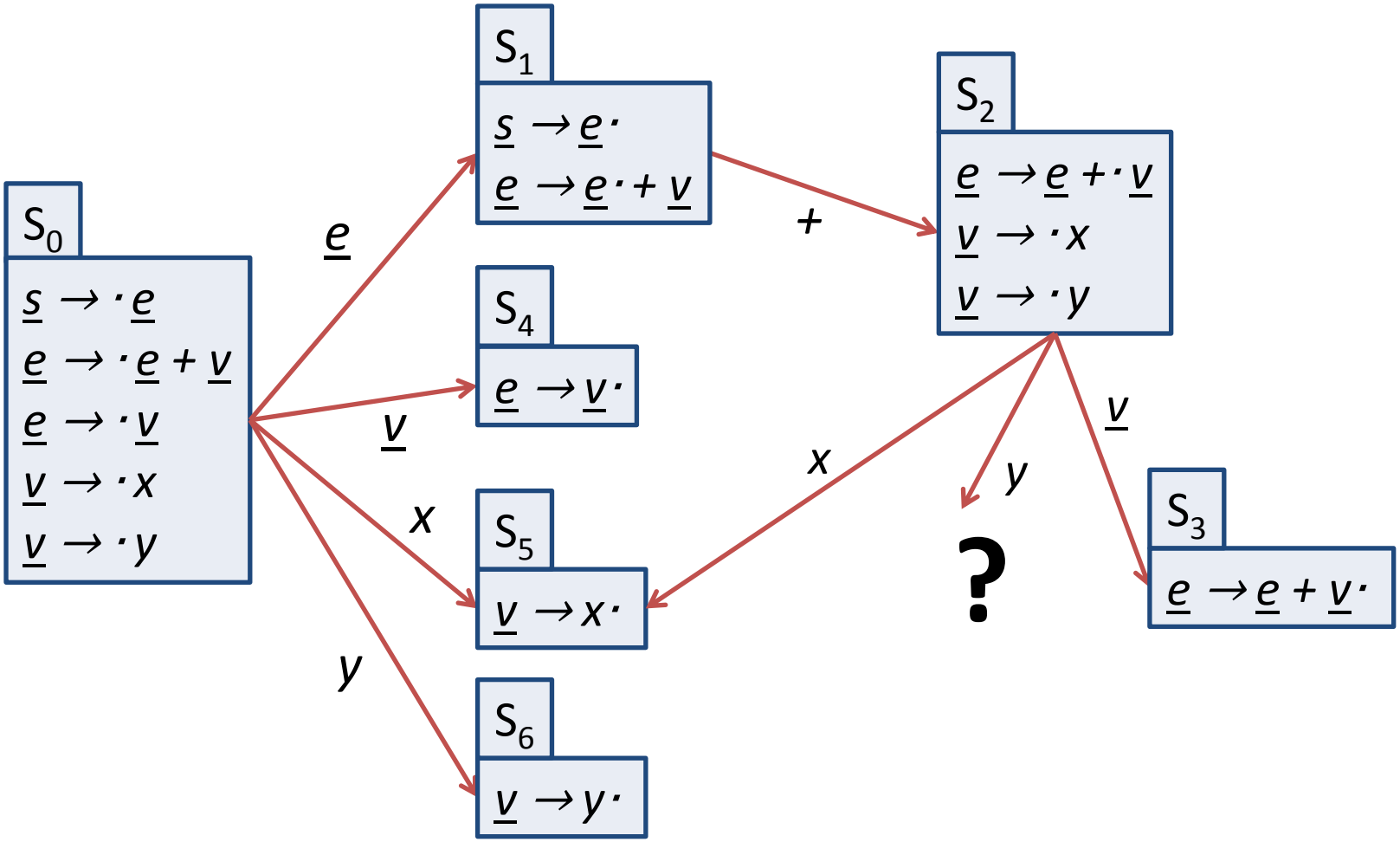
Compute *GOTO*(S_2, $\underline{v}$)



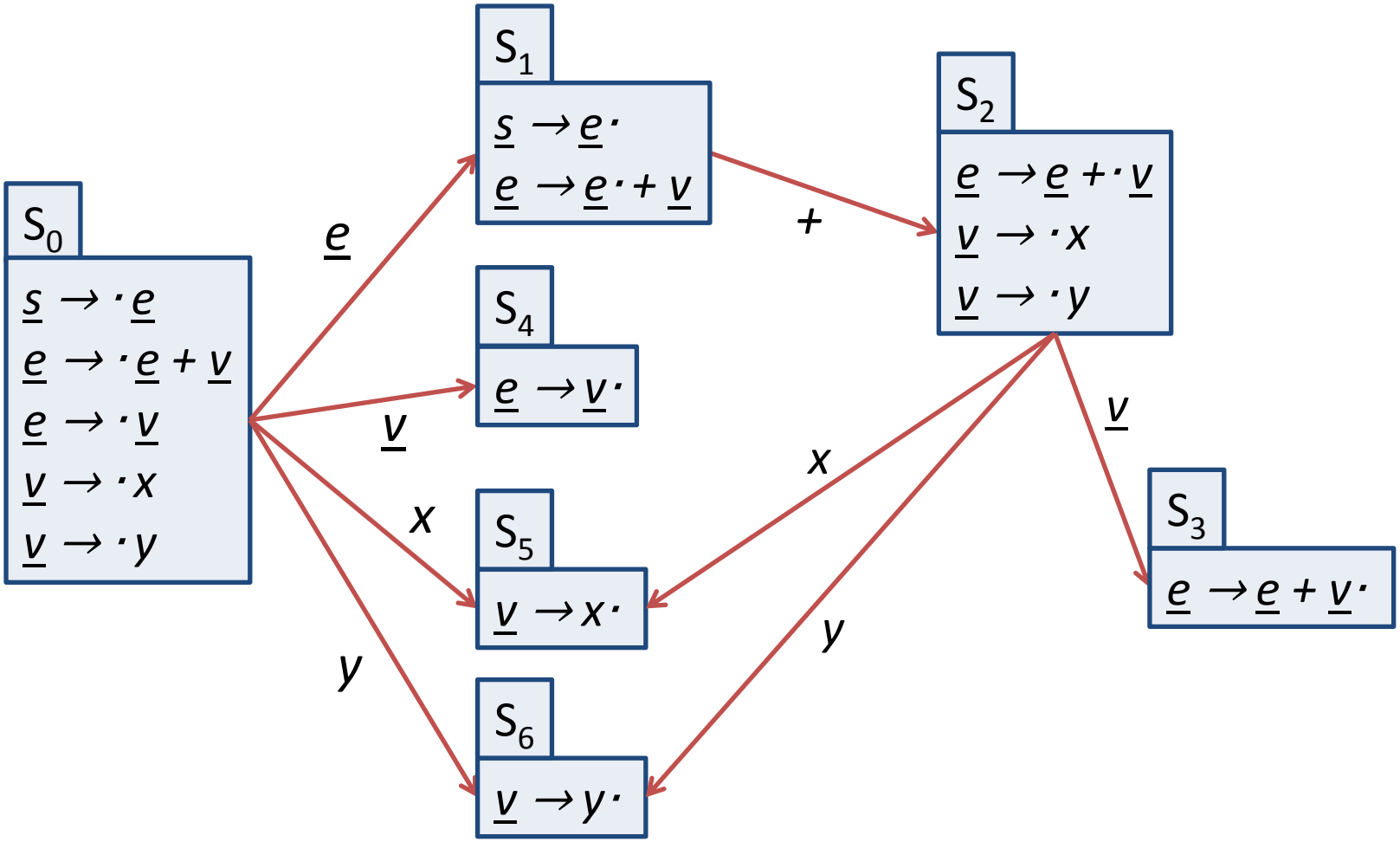
Compute *GOTO*(S_2, $\underline{v}$)



Compute *GOTO*(S_2, *x*)



Compute *GOTO*(S_2, *y*)



LR(0) automaton