





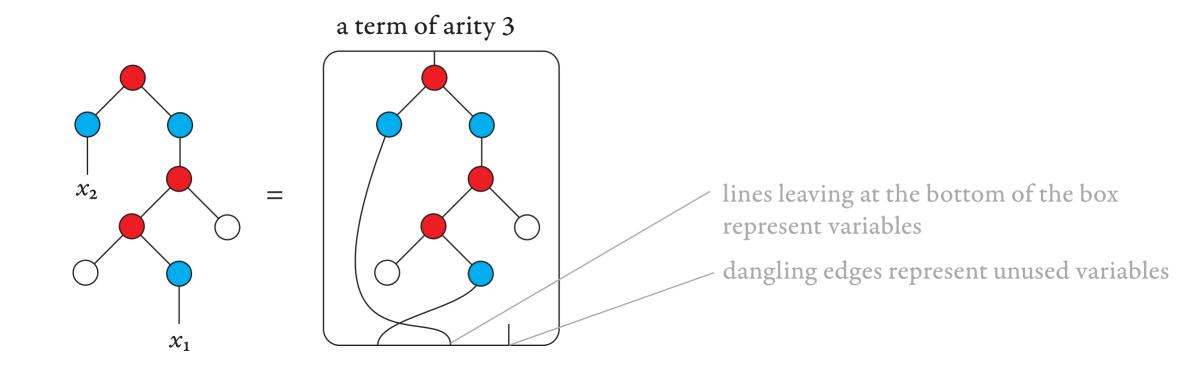


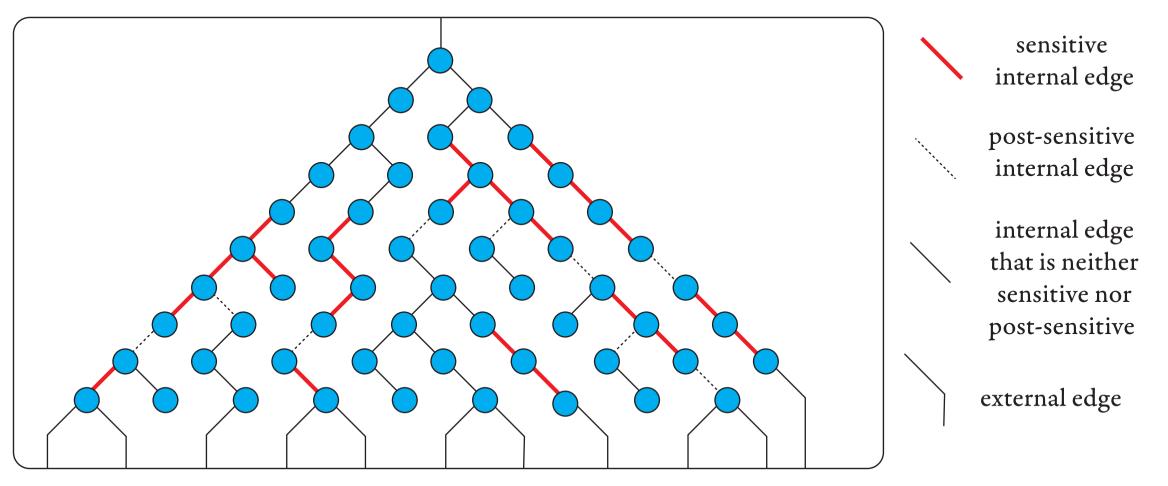


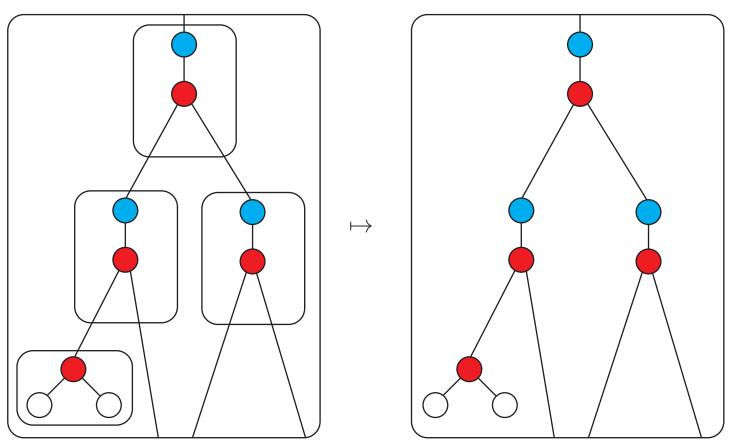
substitute(t)







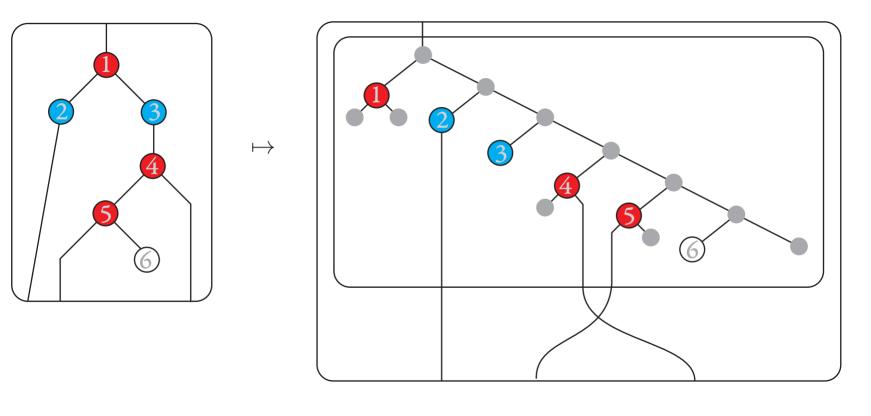






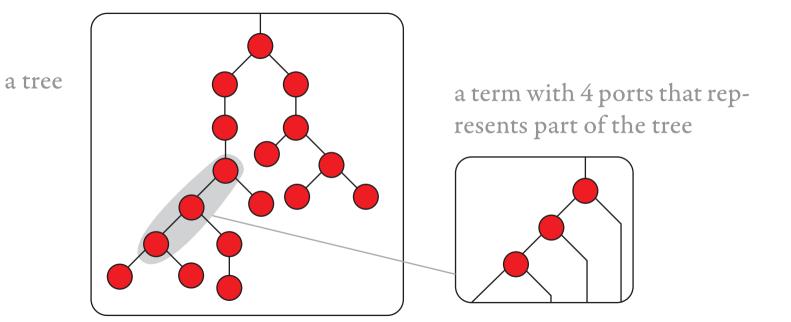






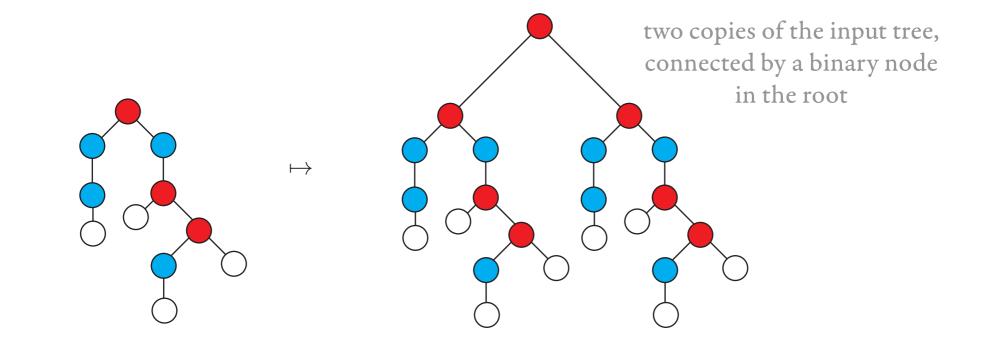
a factorisation equivalence

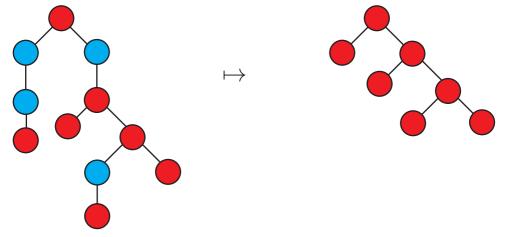






























If the root has arity n, and $1 \le i < j \le n$, then all ports of the *j*-th subterm of the root are after all ports of the *i*-th subterm of the root



satisfies (*)

violates (*)

a register update

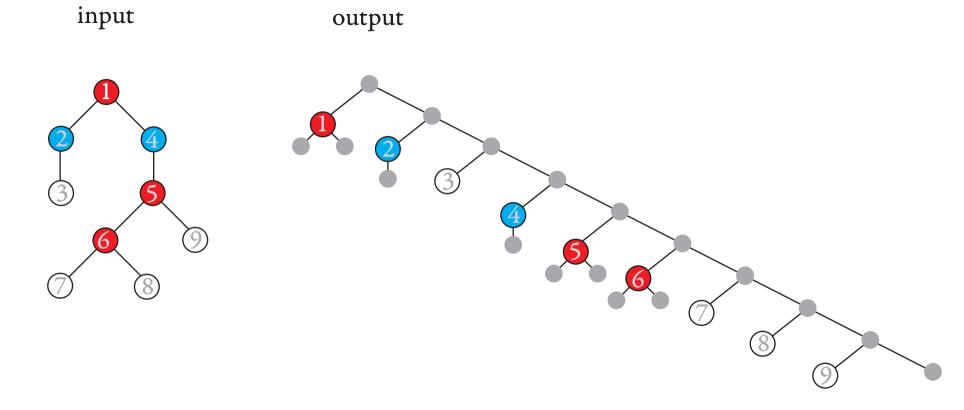
its dual

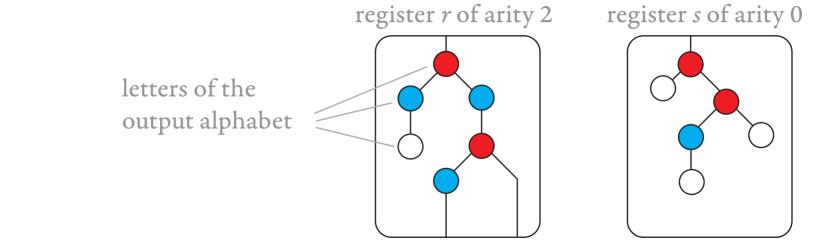


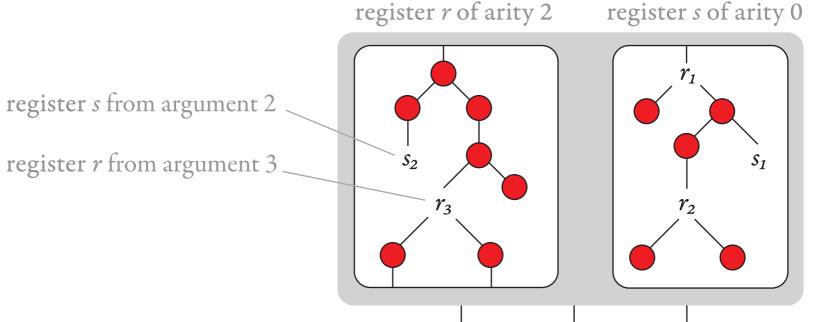
Variable *i.j* represents register *i* in the *j*-th argument of the reigster update.

In the dual, this variable is mapped to the *i*-th edge which enters the *j*-th port of the reducer.

















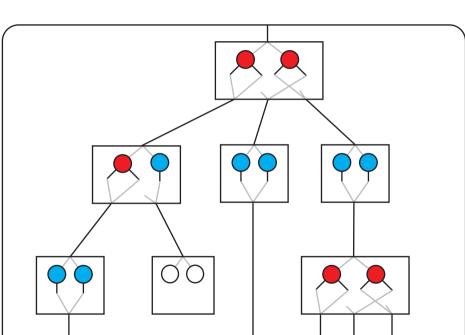


factors with branching nodes

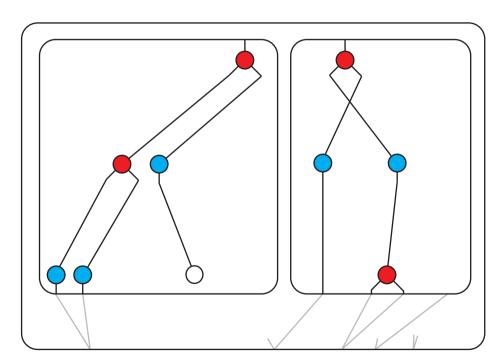


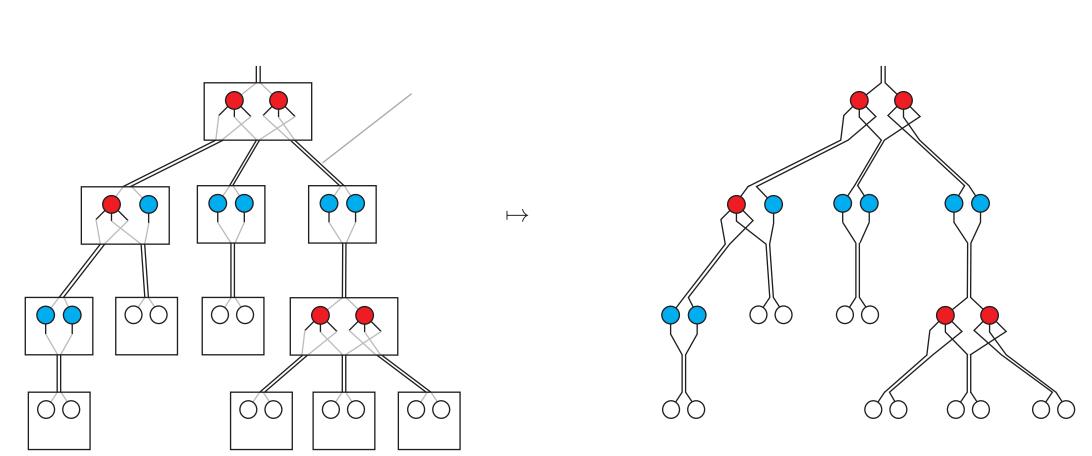


a term of matrix powers



its term unfolding















λ-term of type *o*



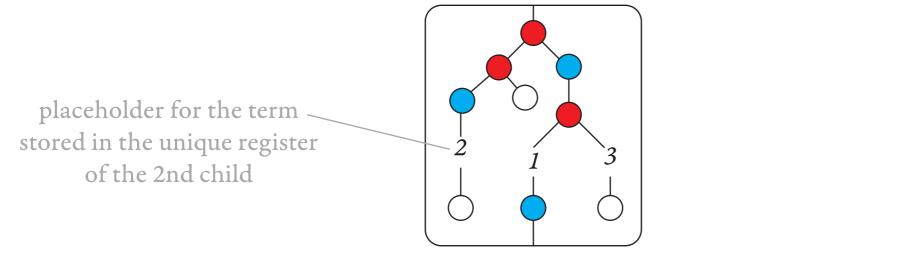




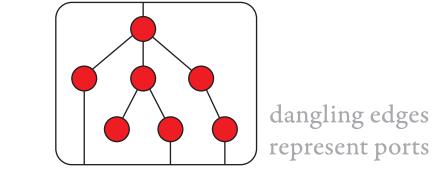
 λx .

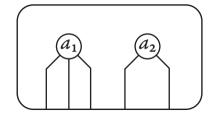


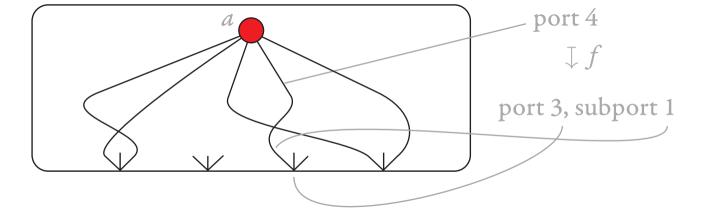




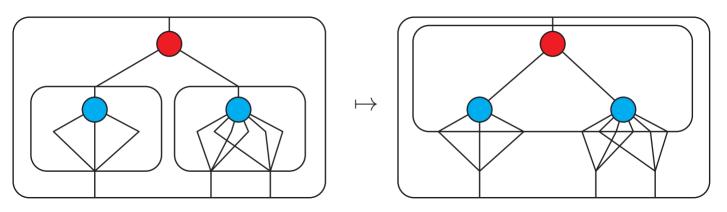


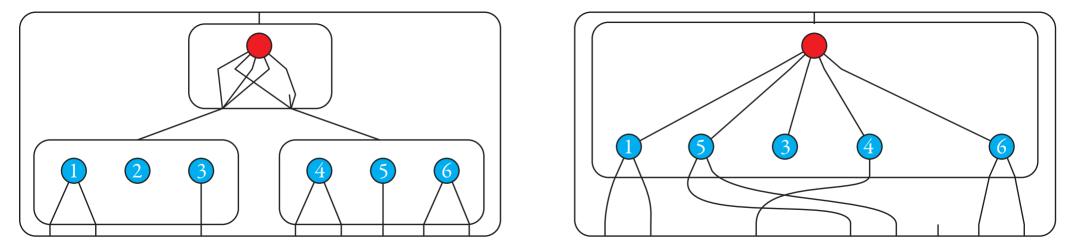
















its representation as a λ -term





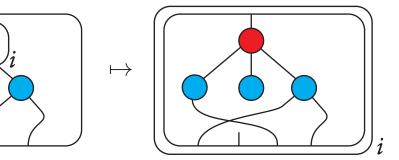


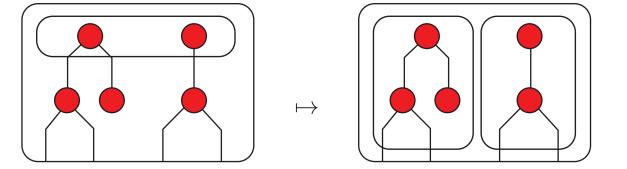


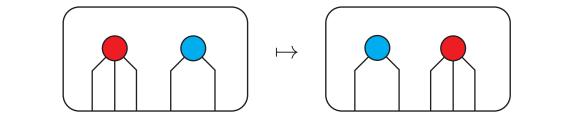






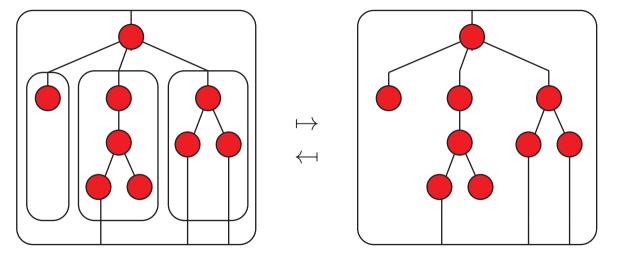


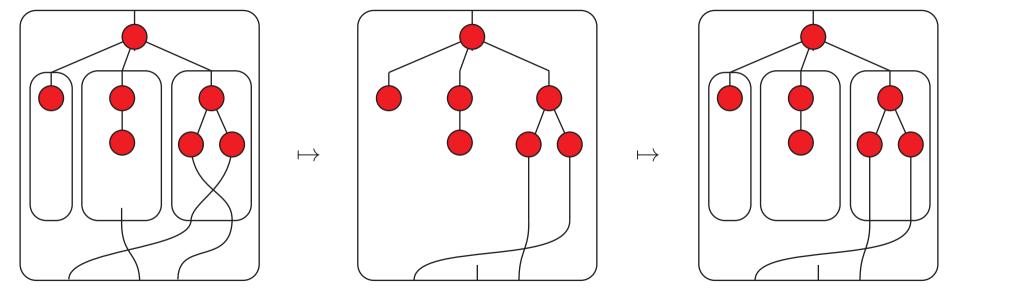










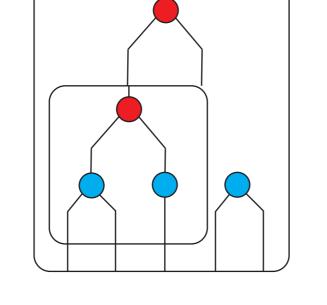


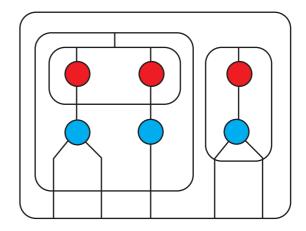


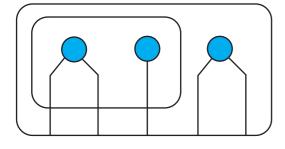






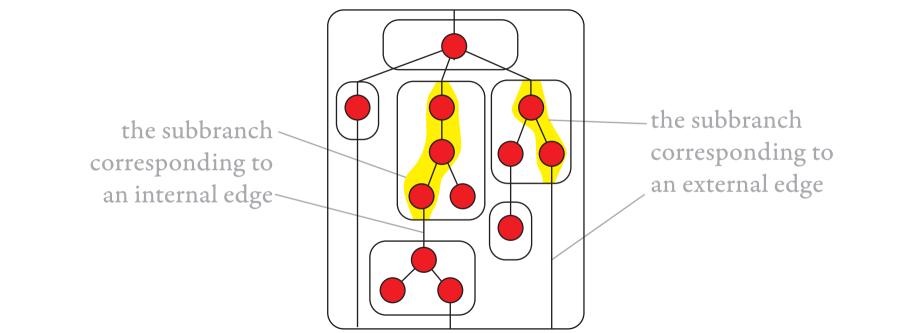


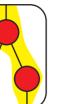






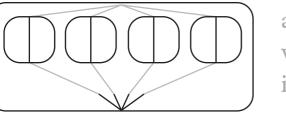






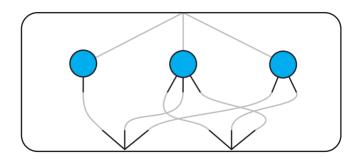
a branch can be visualised as a term with a distinguished root-to-port path

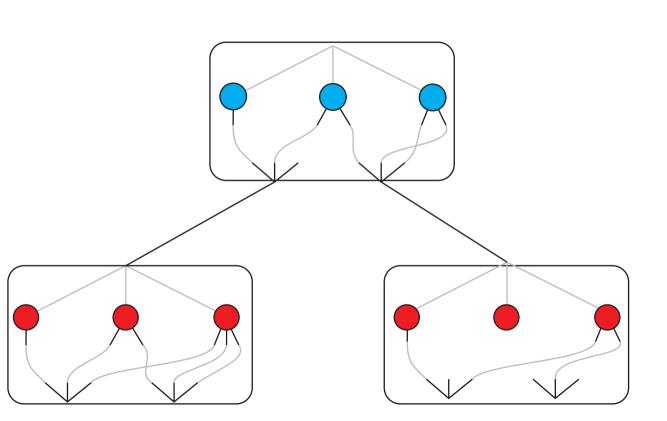


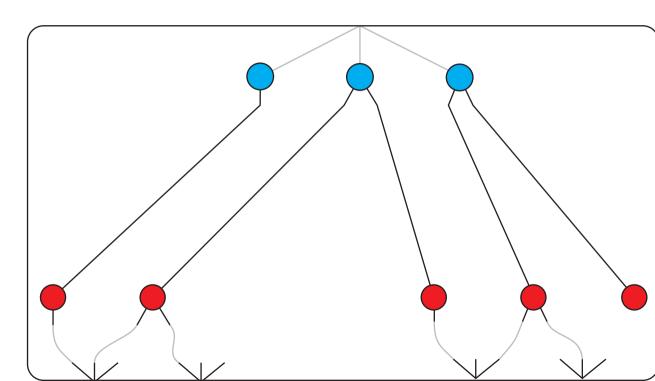


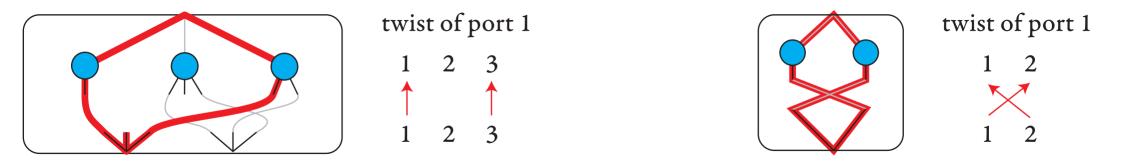
a tuple of *k* identity terms with all their ports folded into one

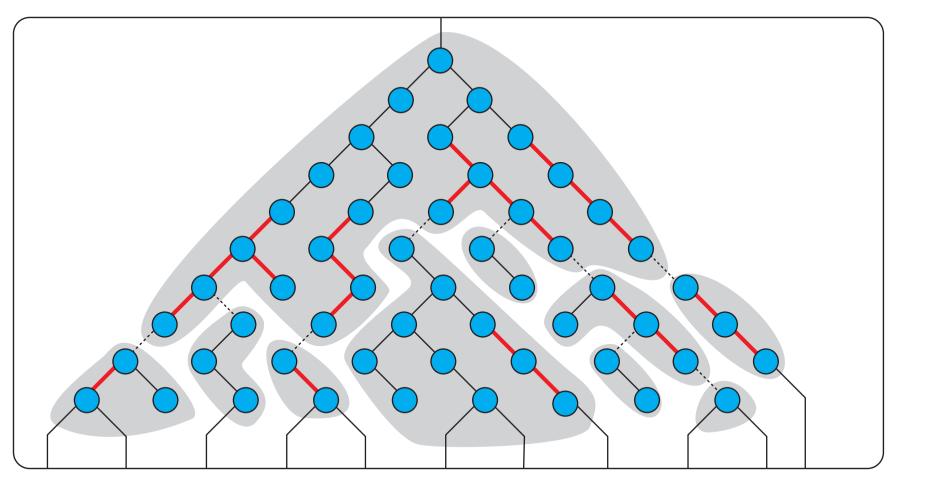
$$\Sigma = \{ \bigcirc, \bigcirc, \bigcirc \}$$
 $a \in \Sigma^{[2]}$ $b \in \Sigma^{[2]}$

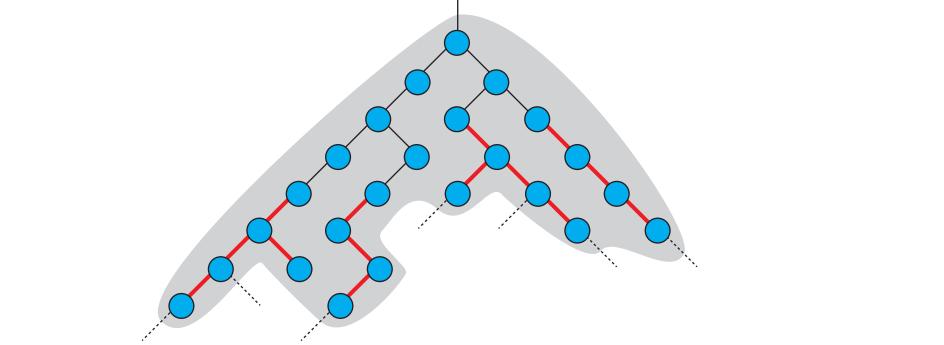


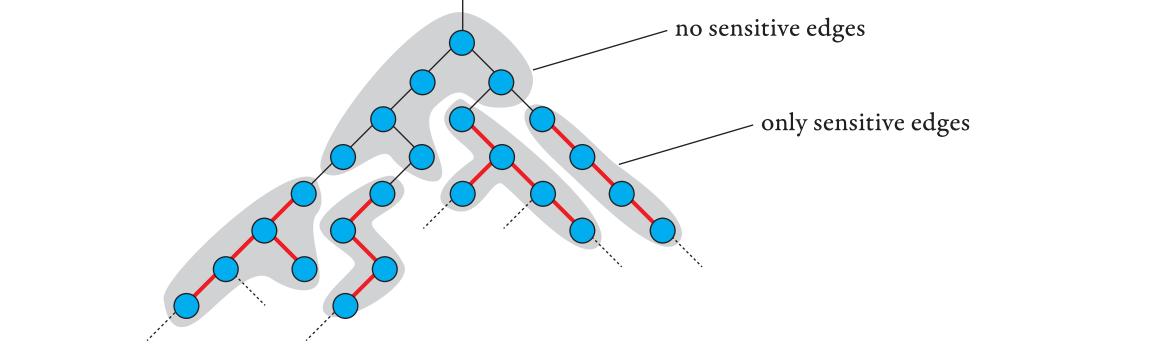


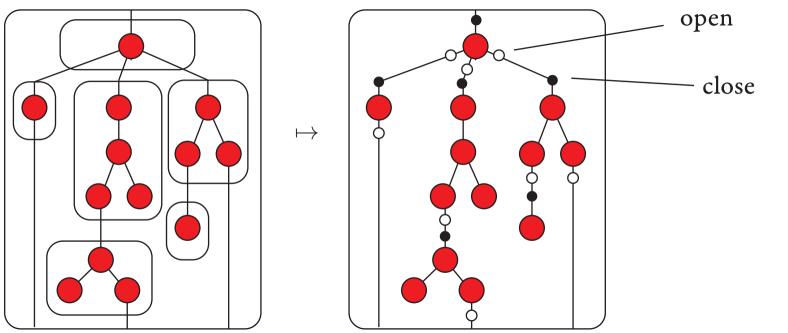






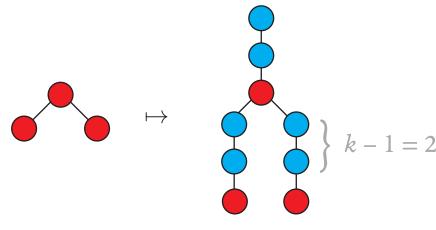






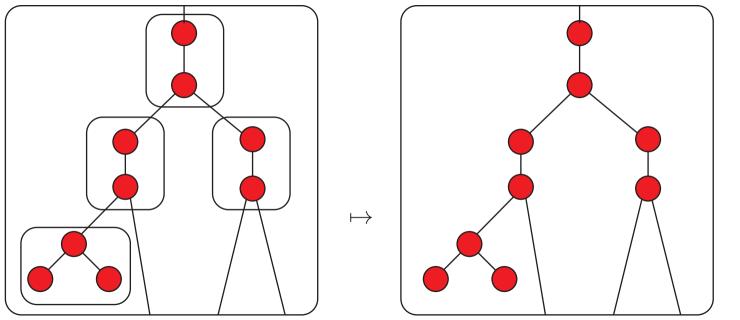




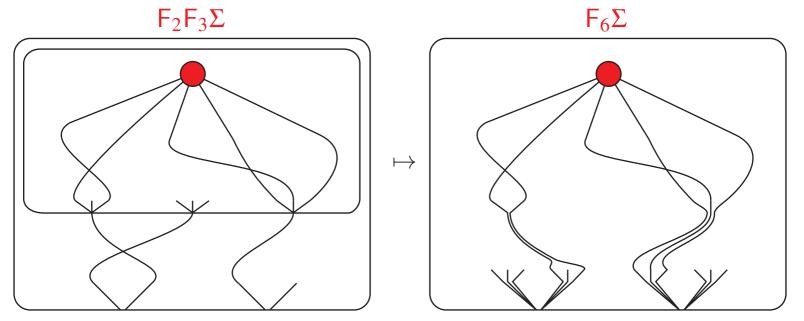


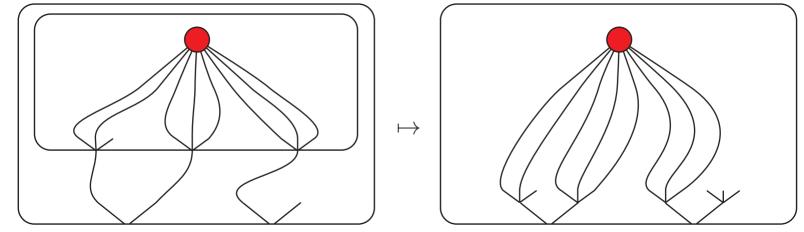


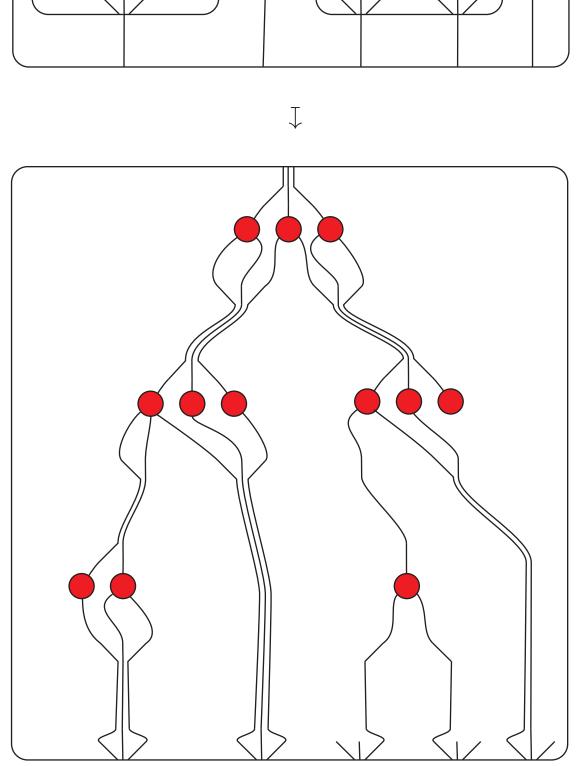


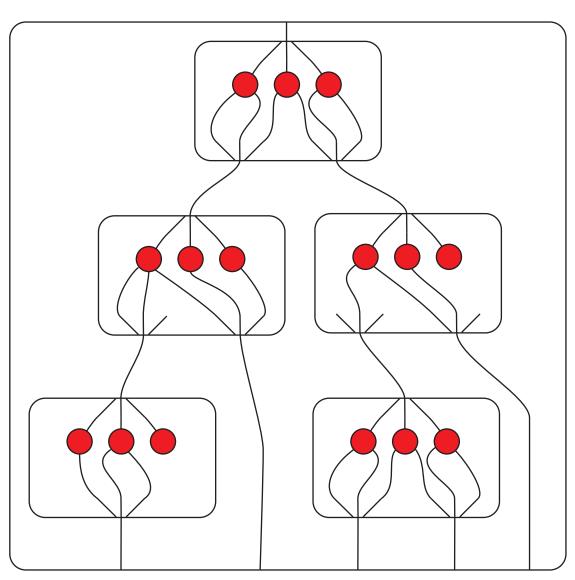


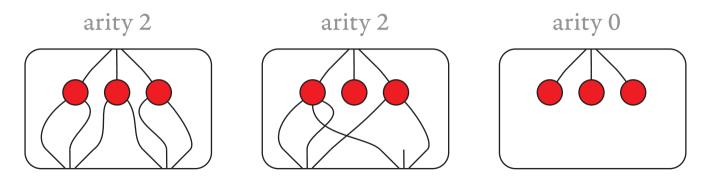


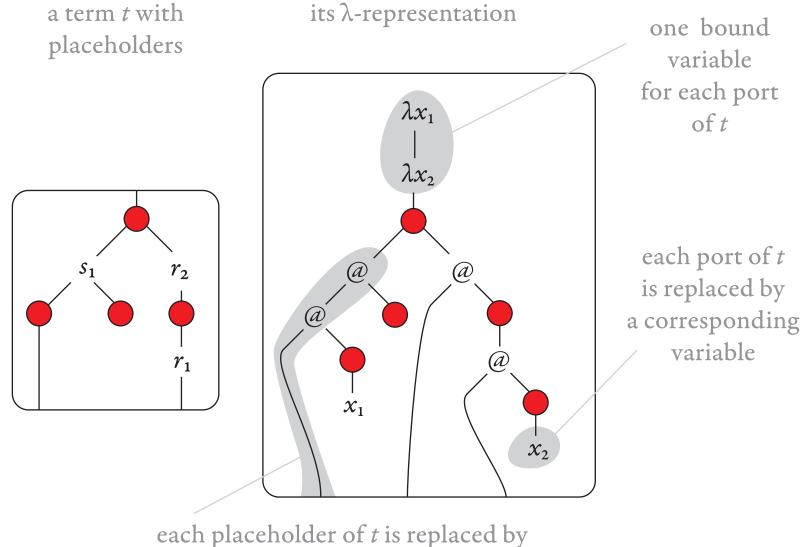




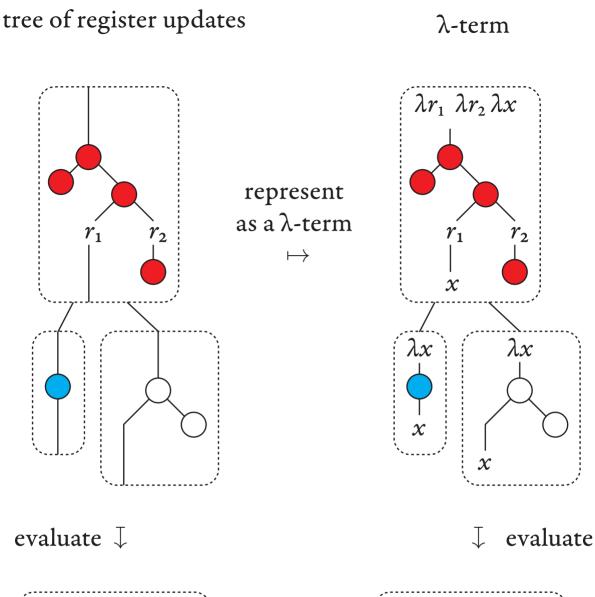


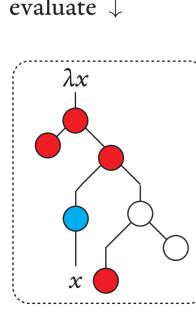


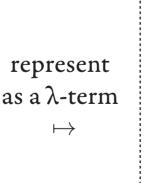


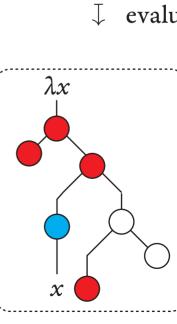


each placeholder of *t* is replaced by a port applied to its children using @



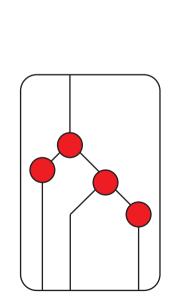


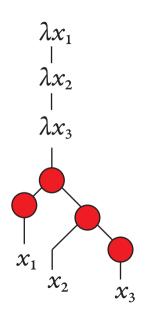


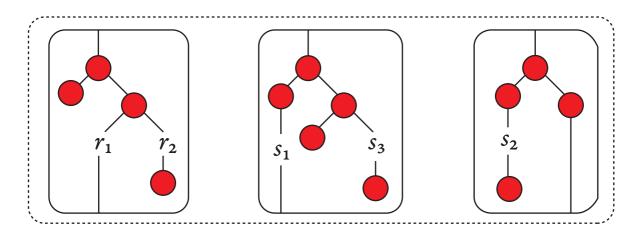


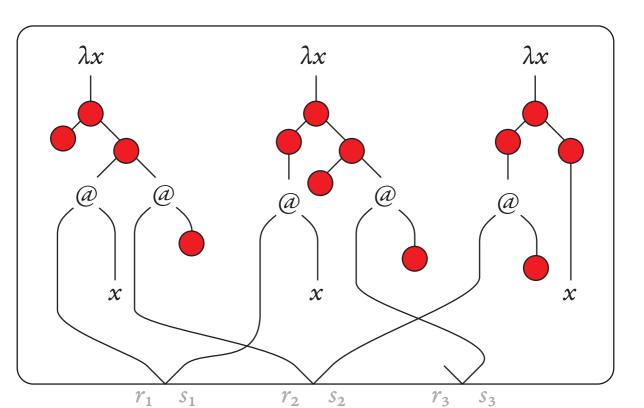
a term

its λ -representation

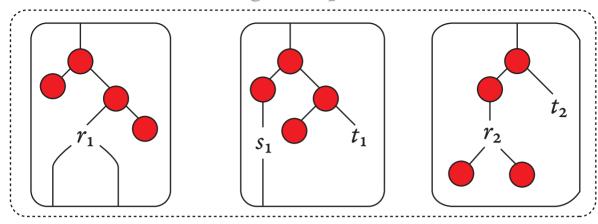




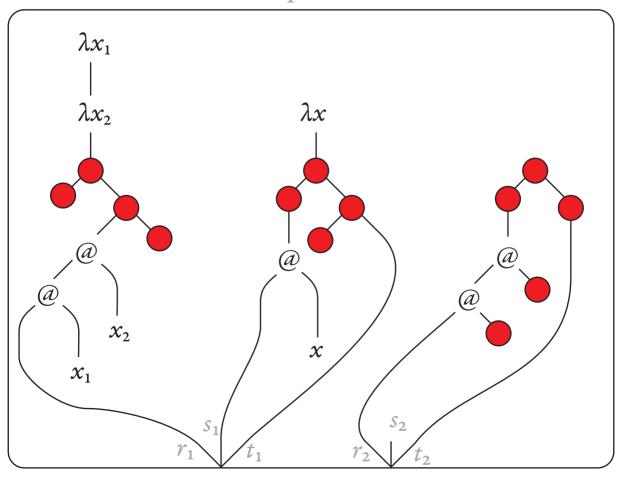


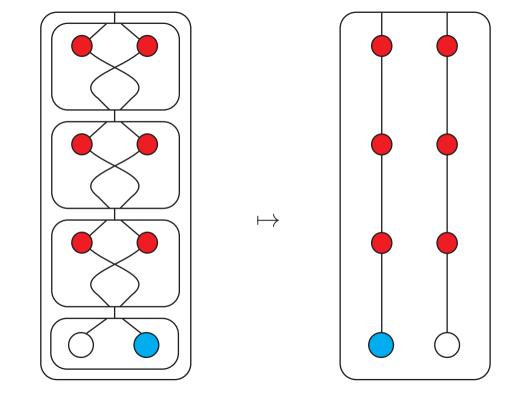


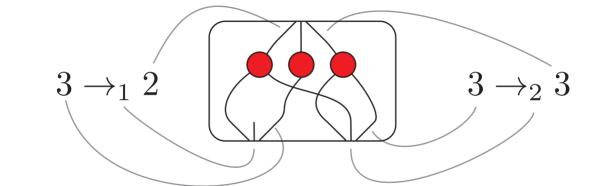
a register update



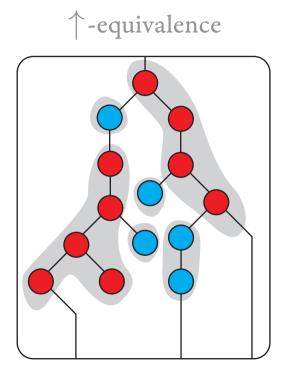
its λ -representation



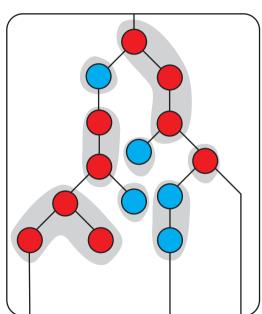


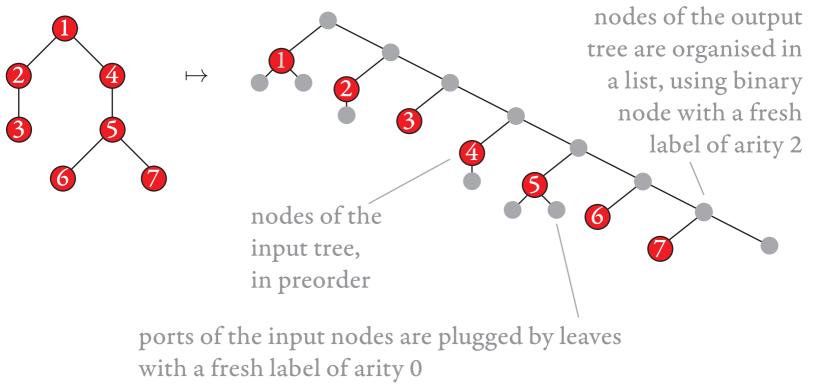


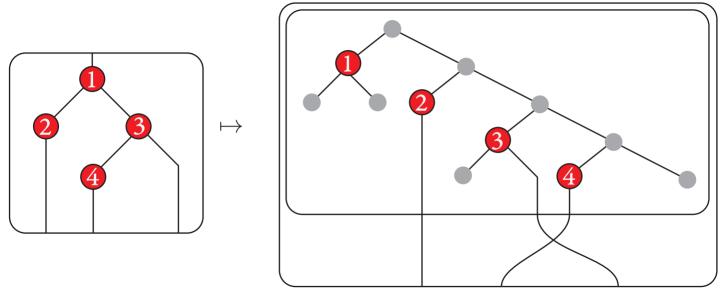




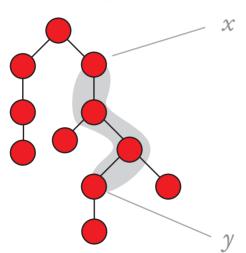






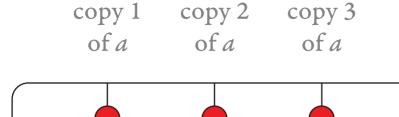


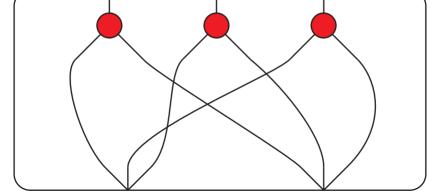
tree with a path from *x* to *y*

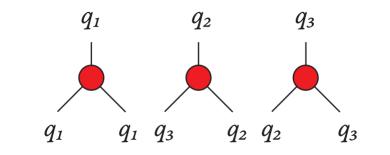


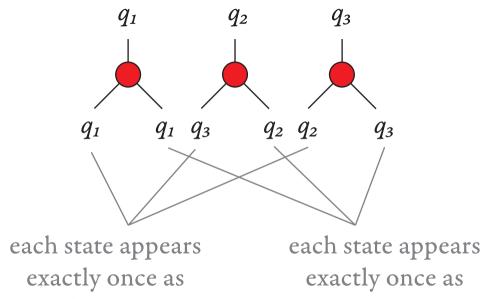
word corresponding to the path



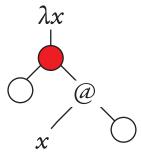


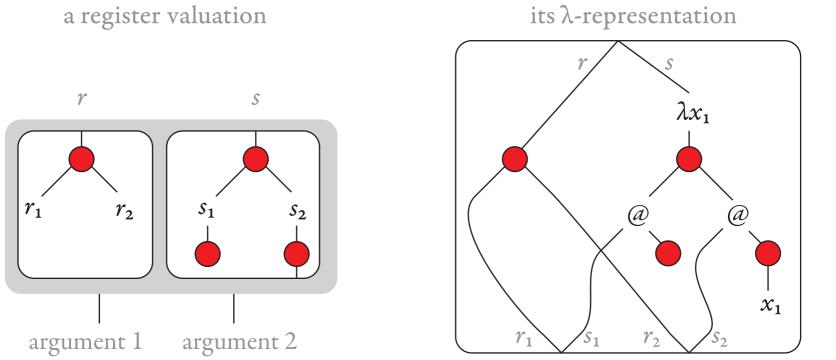


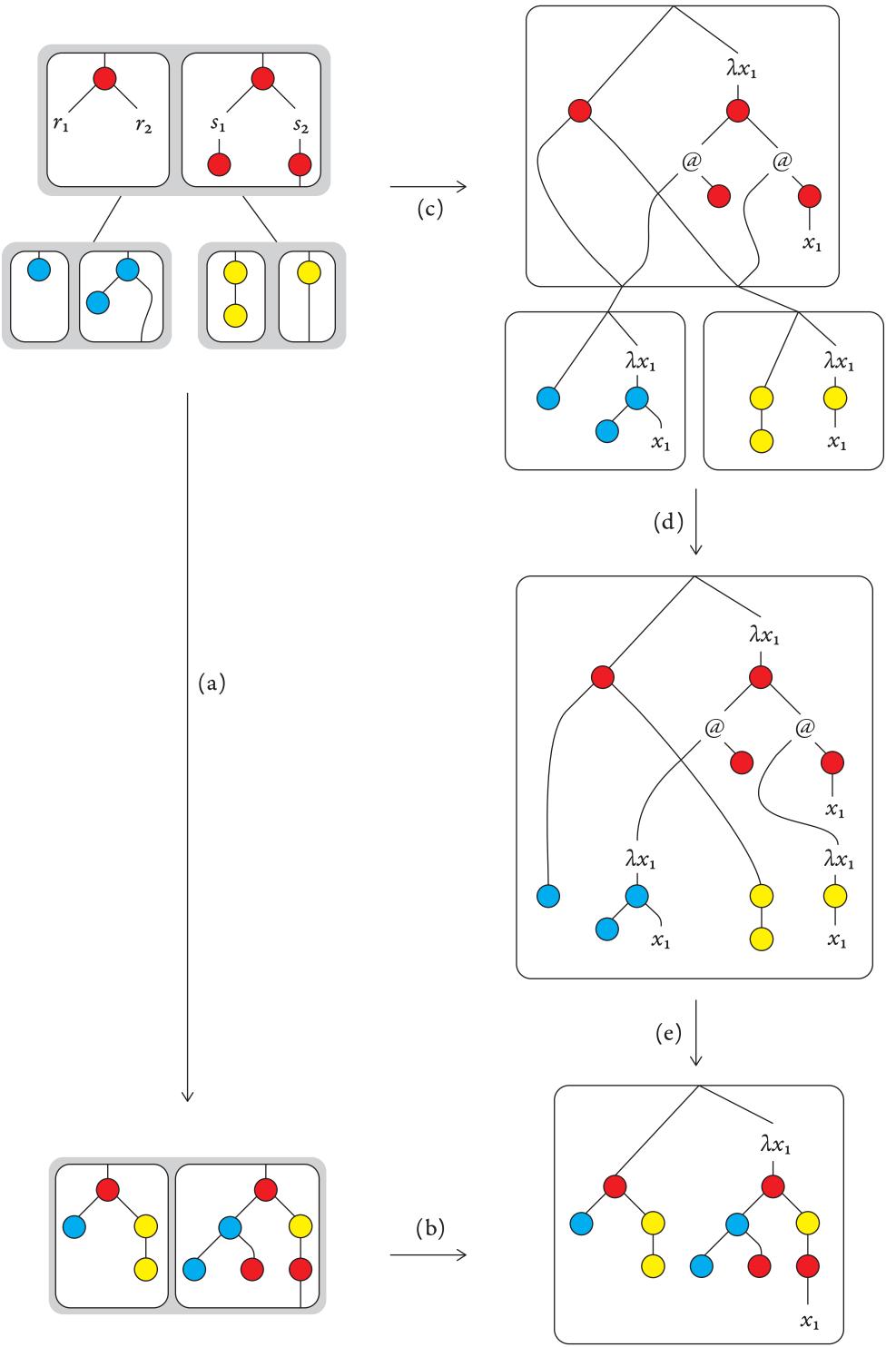




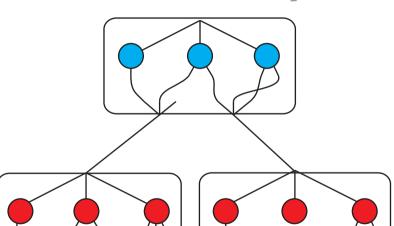
exactly once as a second child a first child







shallow term of matrix powers



its unfolding

