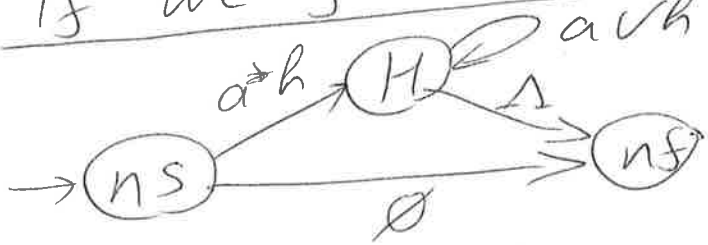
HW3

Pt. 1

If we first delete S:



$R'_{ns,H} = R_{ns,H} \cup (R_{ns,s} R_{s,s}^* R_{s,H}) =$

$\emptyset \cup (\Lambda a^* h) = a^* h$

$R'_{ns,nf} = R_{ns,nf} \cup (R_{ns,s} R_{s,s}^* R_{s,nf}) =$

$\emptyset \cup (\Lambda a^* \emptyset) = \emptyset$

$R'_{H,H} = R_{H,H} \cup (R_{H,s} R_{s,s}^* R_{s,H}) =$

$a \cup h \cup (\emptyset \dots) = a \cup h$

$R'_{H,nf} = R_{H,nf} \cup (R_{H,s} R_{s,s}^+ R_{s,nf}) =$

$\Lambda \cup (\emptyset \dots) = \Lambda$

$R'_{ns,nf} = R_{ns,nf} \cup (R_{ns,H} R_{H,H}^* R_{H,nf}) =$

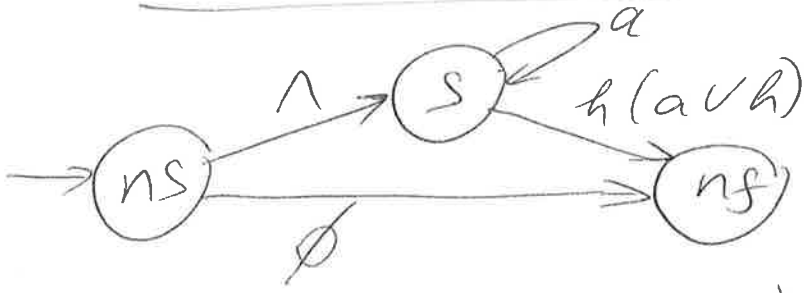
$\emptyset \cup (a^* h (a \cup h)^* \Lambda) =$

$a^* h (a \cup h)^*$

HW3

pt. 2

If we delete H:

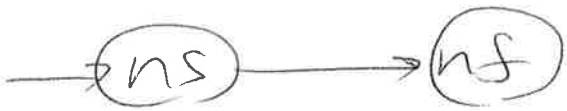


$$R'_{ns,s} = R_{ns,s} \cup (R_{ns,H} R_{H,H}^{*} R_{H,s}) =$$
$$\Lambda \cup (\emptyset \cdots) = \Lambda$$

$$R'_{ns,nf} = R_{ns,nf} \cup (R_{ns,H} R_{H,H}^{*} R_{H,nf}) =$$
$$\emptyset \cup (\emptyset \cdots) = \emptyset$$

$$R'_{s,s} = R_{s,s} \cup (R_{s,H} R_{H,H}^{*} R_{H,s}) =$$
$$a \cup (h(a \cup h)^{*} \emptyset) = a$$

$$R'_{s,nf} = R_{s,nf} \cup (R_{s,H} R_{H,H}^{*} R_{H,nf}) =$$
$$\emptyset \cup (h(a \cup h)^{*} \Lambda) = h(a \cup h)^{*}$$



$$R'_{ns,nf} = R_{ns,nf} \cup (R_{ns,s} R_{s,s}^{*} R_{s,nf}) =$$
$$\emptyset \cup (\Lambda a^{*} (h(a \cup h)^{*})^{+}) =$$
$$a^{*} (h(a \cup h)^{*})^{*}$$