

Computing ... (Accept:  $q_{acc}$  , Reject:  $q_{re}$ )

equal?	$\sqsubset$	$=$	I	0	X
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

I I 0 0 I 0 = I I 0 0 I 0  $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$

Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	<b>I</b>	<b>O</b>	<b>X</b>
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, \mathbf{I}, \mathcal{L})$	$(q_{be}, \mathbf{O}, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, \mathbf{I}, \mathcal{L})$	$(q_{bf}, \mathbf{O}, \mathcal{L})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, \mathbf{I}, \mathcal{R})$	$(q_f, \mathbf{O}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$
<b><math>q_{f'}</math></b>	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	<b><math>(q_{f'}, \mathbf{I}, \mathcal{R})</math></b>	$(q_{f'}, \mathbf{O}, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_o, \mathbf{X}, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, \mathbf{X}, \mathcal{R})$

X	I	0	0	I	0	=	I	I	0	0	I	0	,	,	,	,	,	,	,	,	,
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Computing ... (Accept:  $q_{acc}$  , Reject:  $q_{re}$ )

equal?	$\sqsubset$	=	I	0	X
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X I 0 0 I 0 = I I 0 0 I 0  $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$   $\sqsubset$

Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	I	0	X
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

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Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	I	O	X
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, O, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, O, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, O, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, O, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X	I	O	O	I	O	=	I	I	O	O	I	O	,	,	,	,	,	,	,	,
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Computing ... (Accept:  $q_{acc}$  , Reject:  $q_{re}$ )

equal?	$\perp$	=	I	0	X
$\rightarrow q_0$	$(q_{re}, \perp, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \perp, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X I 0 0 I 0 = I I 0 0 I 0  $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$





Computing ... (Accept:  $q_{acc}$  , Reject:  $q_{re}$ )

equal?	$\perp$	=	I	0	X
$\rightarrow q_0$	$(q_{re}, \perp, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \perp, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X I 0 0 I 0 = X I 0 0 I 0  $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$

Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	I	O	X
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, O, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, O, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, O, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, O, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

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Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	$\mathbf{I}$	$\mathbf{0}$	$\mathbf{X}$
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, \mathbf{I}, \mathcal{L})$	$(q_{be}, \mathbf{0}, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{L})$
$\mathbf{q}_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(\mathbf{q}_{bf}, \mathbf{I}, \mathcal{L})$	$(q_{bf}, \mathbf{0}, \mathcal{L})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, \mathbf{I}, \mathcal{R})$	$(q_f, \mathbf{0}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, \mathbf{I}, \mathcal{R})$	$(q_{f'}, \mathbf{0}, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_o, \mathbf{X}, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, \mathbf{X}, \mathcal{R})$

[illegible]

Computing ... (Accept:  $q_{acc}$  , Reject:  $q_{re}$ )

equal?	$\perp$	=	I	0	X
$\rightarrow q_0$	$(q_{re}, \perp, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \perp, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X I 0 0 I 0 = X I 0 0 I 0  $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$



Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	$\mathbf{I}$	$\mathbf{0}$	$\mathbf{X}$
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, \mathbf{I}, \mathcal{L})$	$(q_{be}, \mathbf{0}, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{L})$
$\textcolor{red}{q}_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$\textcolor{red}{(q}_{bf}, \mathbf{I}, \mathcal{L})$	$(q_{bf}, \mathbf{0}, \mathcal{L})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, \mathbf{I}, \mathcal{R})$	$(q_f, \mathbf{0}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, \mathbf{I}, \mathcal{R})$	$(q_{f'}, \mathbf{0}, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_o, \mathbf{X}, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, \mathbf{X}, \mathcal{R})$

X	I	0	0	I	0	=	X	I	0	0	I	0	,	,	,	,	,	,	,	,	,
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Computing ... (Accept:  $q_{acc}$  , Reject:  $q_{re}$ )

equal?	$\perp$	=	I	0	X
$\rightarrow q_0$	$(q_{re}, \perp, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \perp, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

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Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	I	O	X
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, O, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, O, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, O, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, O, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X	X	0	0	I	0	=	X	I	0	0	I	0	,	,	,	,	,	,	,	,
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	$\mathbf{I}$	$\mathbf{O}$	$\mathbf{X}$
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, \mathbf{I}, \mathcal{L})$	$(q_{be}, \mathbf{O}, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, \mathbf{I}, \mathcal{L})$	$(q_{bf}, \mathbf{O}, \mathcal{L})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, \mathbf{I}, \mathcal{R})$	$(q_f, \mathbf{O}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, \mathbf{I}, \mathcal{R})$	$(q_{f'}, \mathbf{O}, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_o, \mathbf{X}, \mathcal{R})$
$\mathbf{q}_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, \mathbf{X}, \mathcal{R})$

X	X	O	O	I	O	=	X	I	O	O	I	O	,	,	,	,	,	,	,	,	,
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---









Computing ... (Accept:  $q_{acc}$  , Reject:  $q_{re}$ )

equal?	$\perp$	=	I	0	X
$\rightarrow q_0$	$(q_{re}, \perp, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \perp, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \perp, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \perp, \mathcal{L})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \perp, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X X 0 0 I 0 = X X 0 0 I 0  $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$   $\perp$

Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	$\mathbf{I}$	$\mathbf{0}$	$\mathbf{X}$
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, \mathbf{I}, \mathcal{L})$	$(q_{be}, \mathbf{0}, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, \mathbf{I}, \mathcal{L})$	$(q_{bf}, \mathbf{0}, \mathcal{L})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, \mathbf{I}, \mathcal{R})$	$(q_f, \mathbf{0}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, \mathbf{I}, \mathcal{R})$	$(q_{f'}, \mathbf{0}, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_o, \mathbf{X}, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, \mathbf{X}, \mathcal{R})$

[illegible]































































Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	$\mathbf{I}$	$\mathbf{0}$	$\mathbf{X}$
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, \mathbf{I}, \mathcal{L})$	$(q_{be}, \mathbf{0}, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, \mathbf{I}, \mathcal{L})$	$(q_{bf}, \mathbf{0}, \mathcal{L})$	$(q_0, \mathbf{X}, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, \mathbf{I}, \mathcal{R})$	$(q_f, \mathbf{0}, \mathcal{R})$	$(q_f, \mathbf{X}, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, \mathbf{I}, \mathcal{R})$	$(q_{f'}, \mathbf{0}, \mathcal{R})$	$(q_{f'}, \mathbf{X}, \mathcal{R})$
$\mathbf{q}_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_o, \mathbf{X}, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, \mathbf{X}, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, \mathbf{X}, \mathcal{R})$

X	X	X	X	I	O	=	X	X	X	0	I	O	,	,	,	,	,	,	,	,
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---















Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	I	0	X
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X	X	X	X	I	0	=	X	X	X	X	I	O	,	,	,	,	,	,	,	,	,
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Computing ... (*Accept*:  $q_{acc}$  , *Reject*:  $q_{re}$ )

equal?	$\sqsubset$	$=$	I	0	X
$\rightarrow q_0$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{acc}, =, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$	$(q_f, X, \mathcal{R})$	$(q_0, X, \mathcal{R})$
$q_{be}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{bf}, =, \mathcal{L})$	$(q_{be}, I, \mathcal{L})$	$(q_{be}, 0, \mathcal{L})$	$(q_{be}, X, \mathcal{L})$
$q_{bf}$	$(q_{acc}, \sqsubset, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{bf}, I, \mathcal{L})$	$(q_{bf}, 0, \mathcal{L})$	$(q_0, X, \mathcal{R})$
$q_f$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_o, =, \mathcal{R})$	$(q_f, I, \mathcal{R})$	$(q_f, 0, \mathcal{R})$	$(q_f, X, \mathcal{R})$
$q_{f'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, =, \mathcal{R})$	$(q_{f'}, I, \mathcal{R})$	$(q_{f'}, 0, \mathcal{R})$	$(q_{f'}, X, \mathcal{R})$
$q_o$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_o, X, \mathcal{R})$
$q_{o'}$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{be}, X, \mathcal{R})$	$(q_{re}, \sqsubset, \mathcal{L})$	$(q_{o'}, X, \mathcal{R})$

X	X	X	X	X	=	X	X	X	X	X	0	,	,	,	,	,	,	,	,	,
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



