

sli.do #cube

password: cube

I still own you...

Answers to 3-2-1 questions and private emails,
Homework 1 regrading+solution, Homework 4...

All done by Sunday!

Booleans

true: 2

false: 2

Natural numbers

zero: N

suc: N \rightarrow N

recursion!

Circle

base: S1

loop: Id(base; base)

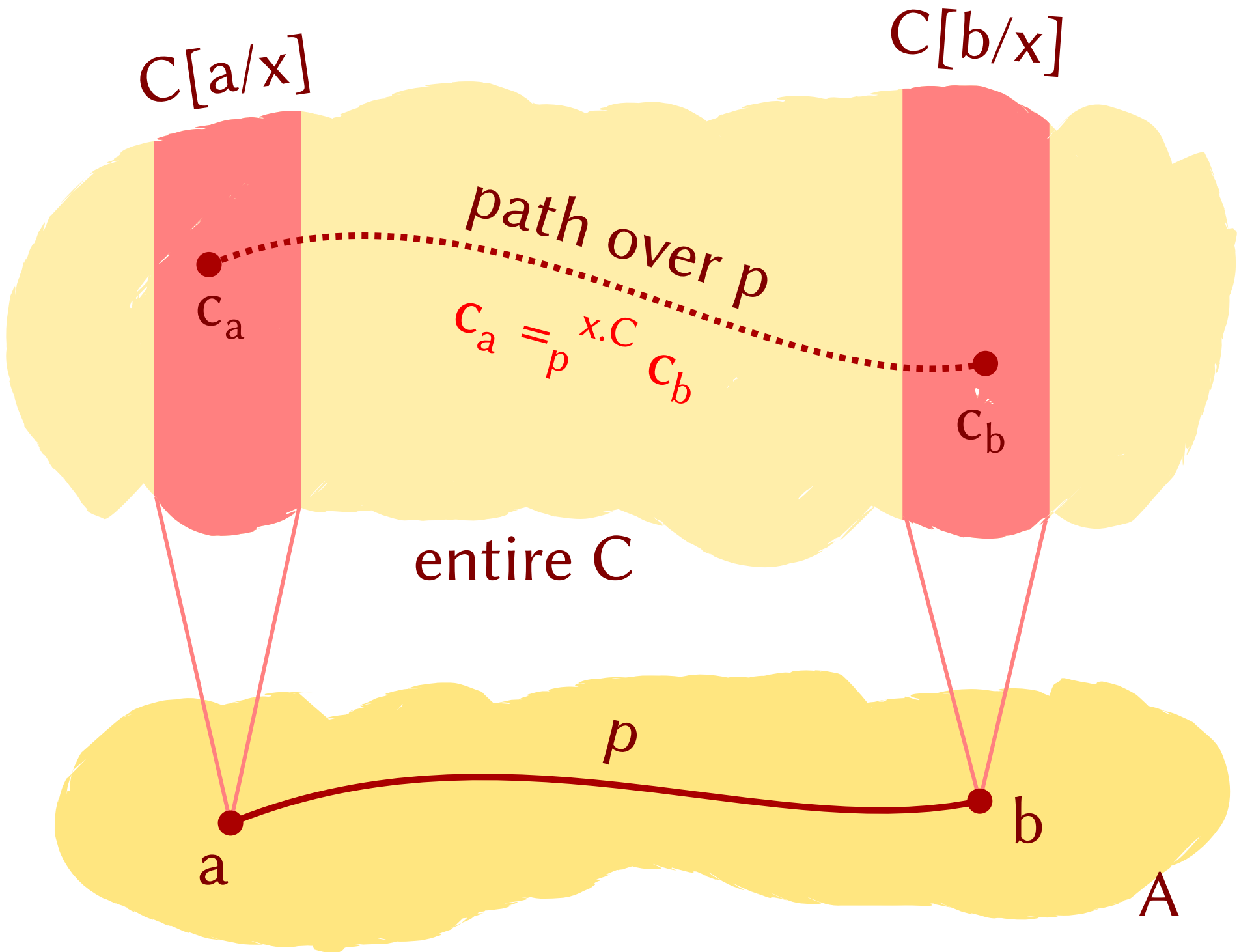
Warning: another
destroyer of harmony

 $S1 : U$

 $base : S1$

 $loop : Id_{S1}(base; base)$ $x : S1 \vdash C : U$ $M_{base} : C[base/x]$ $M_{loop} : ???$ $N : S1$

 $elim_{S1}[x.C](M_{base}; M_{loop}; N) : C[N/x]$



Define

$c_a = p^{x.C} c_b$

pattern match on p



 $S1 : U$

 $base : S1$

 $loop : Id_{S1}(base; base)$ $x : S1 \vdash C : U$ $M_{base} : C[base/x] \quad M_{loop} : base =_{loop} base$ $N : S1$

 $elim_{S1}[x.C](M_{base}; M_{loop}; N) : C[N/x]$

(...)

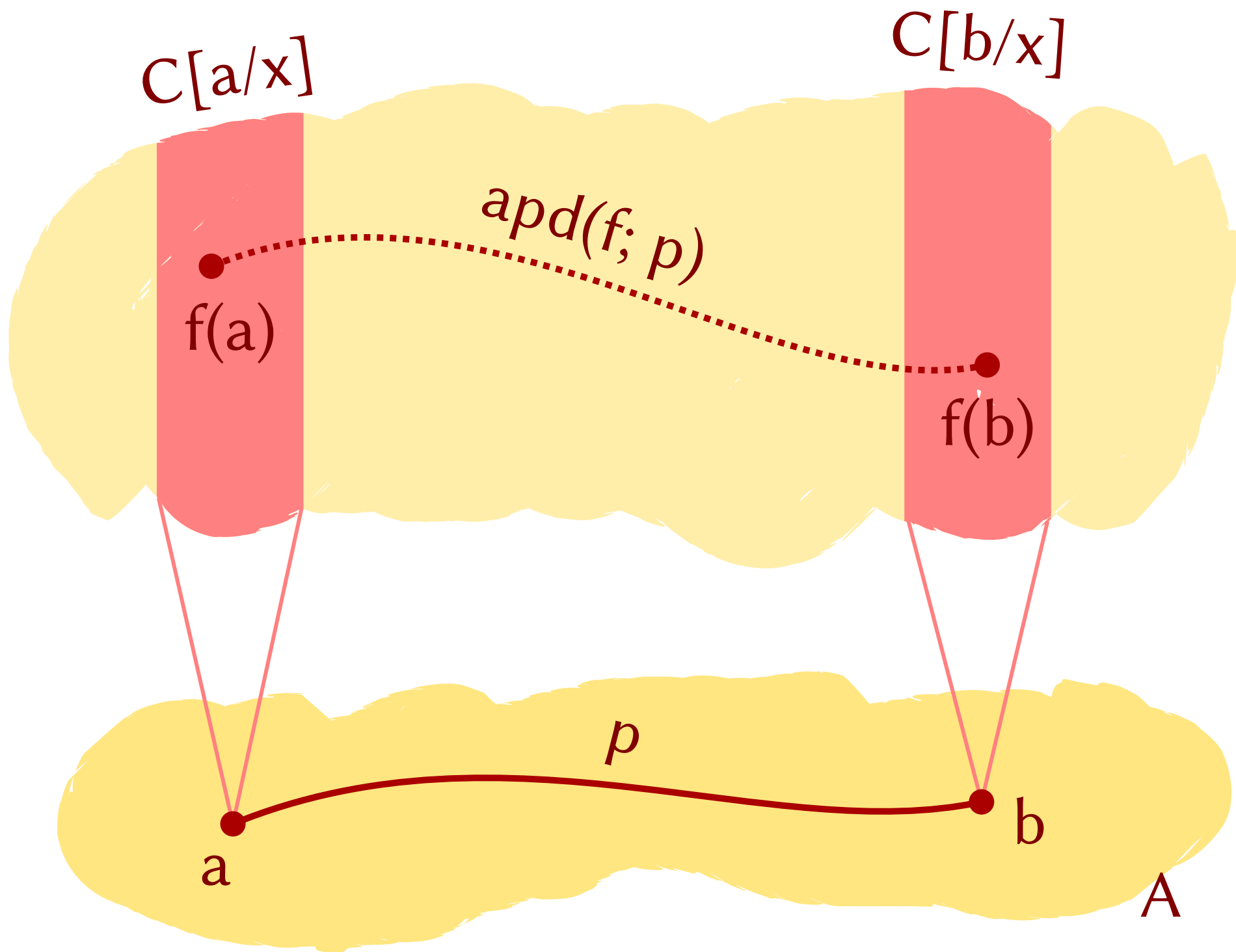
$$\text{elim}_{S_1}[x.C](M_{\text{base}}; M_{\text{loop}}; \text{base}) \equiv M_{\text{base}} : \dots$$

(...)

$$\text{elim}_{S_1}[x.C](M_{\text{base}}; M_{\text{loop}}; \text{loop}) \equiv M_{\text{loop}} : \dots$$

This does not type check

↑
seems
difficult



(...)

$$\text{elim}_{S_1}[x.C](M_{\text{base}}; M_{\text{loop}}; \text{base}) \equiv M_{\text{base}} : \dots$$

(...)

$$\text{apd}(\lambda x. \text{elim}_{S_1}[x.C](M_{\text{base}}; M_{\text{loop}}; x); \text{loop})$$

$= M_{\text{loop}}$



only a path

S1-Alg

$\Sigma_X : U \Sigma_{\text{base} : X} \text{Id}_X(\text{base}; \text{base})$

$\langle S1 , \langle \text{base} , \text{loop} \rangle \rangle$
is the initial one