

## Equalities

- Variable
  - expr
  - base (num)
  - constructor ( $\rightarrow$ )
- solve for

## UNIFICATION

( $\omega \cup$ ) =  $\Sigma$

Set of constraints  
Each constraint is an eq.  
Each eq. has two terms  
Each term is one of

## Unify

• set (constraints)  $\rightarrow$

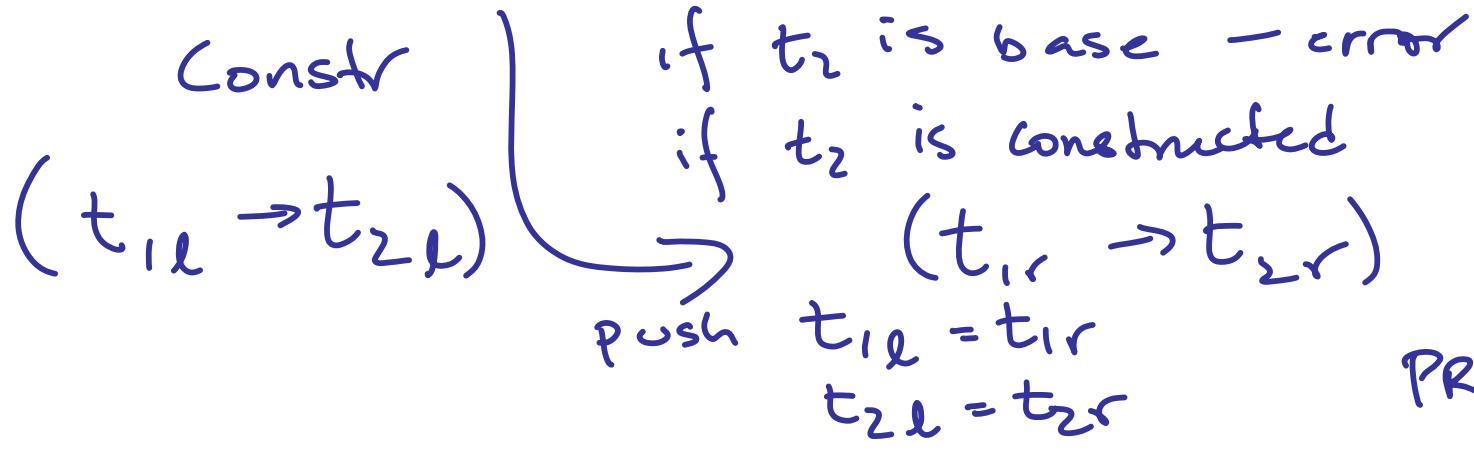
{ Mapping [ • solve for •  
 $\xrightarrow{T+}$  ] }

## Substitution

$\theta$

$t_1 = t_2$        $\Theta$   
 ↳ variable or expr      if  $t_1$  in  $\Theta$   
                         add  
                         else add  
                          $\Theta(t_1) = t_2$  to const  
                          $t_1 = t_2$  to  $\Theta$   
                         and replace  $t_1$  in  $\Theta$   
                         w/  $t_2$

base      if  $t_2$  is base  
                     if same base as  $t_1$   
                         ignore  
                     else error  
                     if  $t_2$  is constructed - error ←  
                     if  $t_2$  is "solve for"  
                         push  $t_2 = t_1$  onto constraints




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$t_{1r}$

$\text{id} \doteq (\lambda (x : -) : - \quad x) : [\boxed{x}] \rightarrow [\boxed{x}]$

$\text{id} \doteq (\lambda (x : -) : - \quad x) : 'a \rightarrow 'a$

in

$(\text{if } (\text{id} \text{ true})$	$'\alpha = \text{bool}$
$(\text{id} \text{ 5})$	$'a = \text{num}$
$(\text{id} \text{ 6})$	$'a = \text{num}$