```
let var_1 = exp_1
    var_2 = exp_2
        ⋮
    var_n = exp_n
in  exp
```

$\Rightarrow_{(10)}$

```
let var_1 = exp_1
in  let var_2 = exp_2
        in   ...
             in let var_n = exp_n
                in  exp
```

if $\underline{\text{var}}_i$ does not depend on $\underline{\text{var}}_{i+1}, \ldots, \underline{\text{var}}_n$

```
let even = \x -> if x ==0 then True else odd(x − 1)
    odd  = \x -> if x ==0 then False else even(x − 1)
    in  even 4
```

$\Downarrow$ (11)

```
let (even, odd) = (\x -> if x ==0 then True else odd(x − 1),
                   \x -> if x ==0 then False else even(x − 1))  in  even 4
```

Dependence & Separation

Let $P = \{\underline{\text{var}}_1 = \underline{\text{exp}}_1; \ldots; \underline{\text{var}}_n = \underline{\text{exp}}_n\}$.

- $\underline{\text{var}}_i \precsim_P \underline{\text{var}}$ iff $\underline{\text{var}}_i = \underline{\text{var}}$ or
  a variable $\underline{\text{var}}'$ with $\underline{\text{var}}' \precsim_P \underline{\text{var}}$ occurs in $\text{free}(\underline{\text{exp}}_i)$

- $\underline{\text{var}}_i \sim_P \underline{\text{var}}$ iff $\underline{\text{var}}_i \precsim_P \underline{\text{var}}$ and $\underline{\text{var}} \precsim_P \underline{\text{var}}_i$

- $\underline{\text{var}}_i \prec_P \underline{\text{var}}$ iff $\underline{\text{var}}_i \precsim_P \underline{\text{var}}$ and $\underline{\text{var}} \not\precsim_P \underline{\text{var}}_i$

- $P_1, \ldots, P_k$ with $P_i = \{\underline{\text{var}}_{i,1} = \underline{\text{exp}}_{i,1}, \ldots, \underline{\text{var}}_{i,n_i} = \underline{\text{exp}}_{i,n_i}\}$
  is a *separation* of P iff
  - $P_1 \uplus \ldots \uplus P_k = P$
  - $P_i \neq \varnothing$ for all $1 \leq i \leq k$
  - $\underline{\text{var}}_{i,1} \sim_P \ldots \sim_P \underline{\text{var}}_{i,n_i}$ for all $1 \leq i \leq k$
  - if $\underline{\text{var}}_{i,j} \precsim_P \underline{\text{var}}_{i',j'}$ then $i \geq i'$