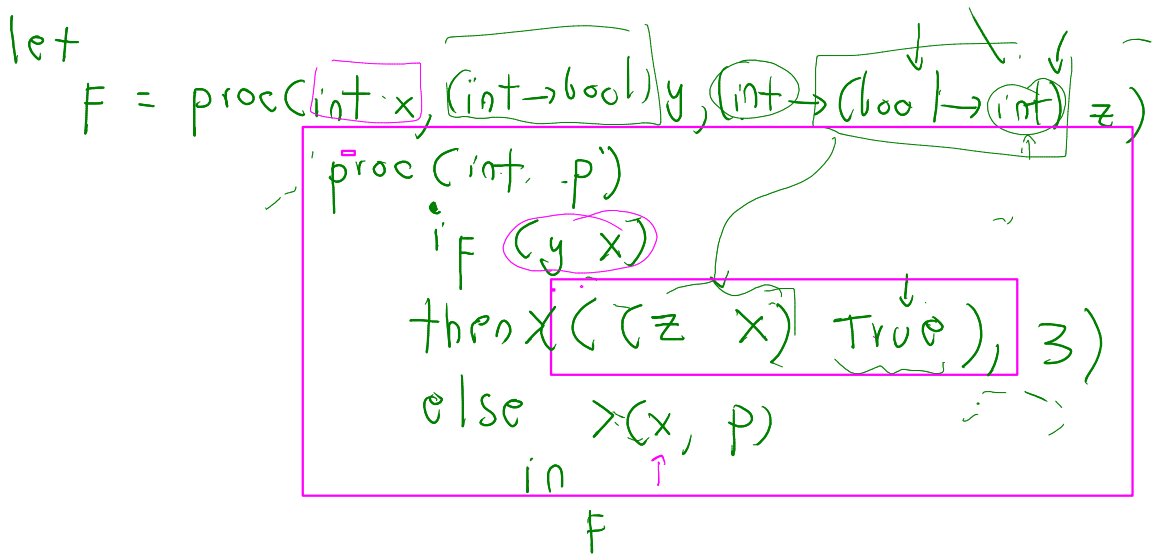
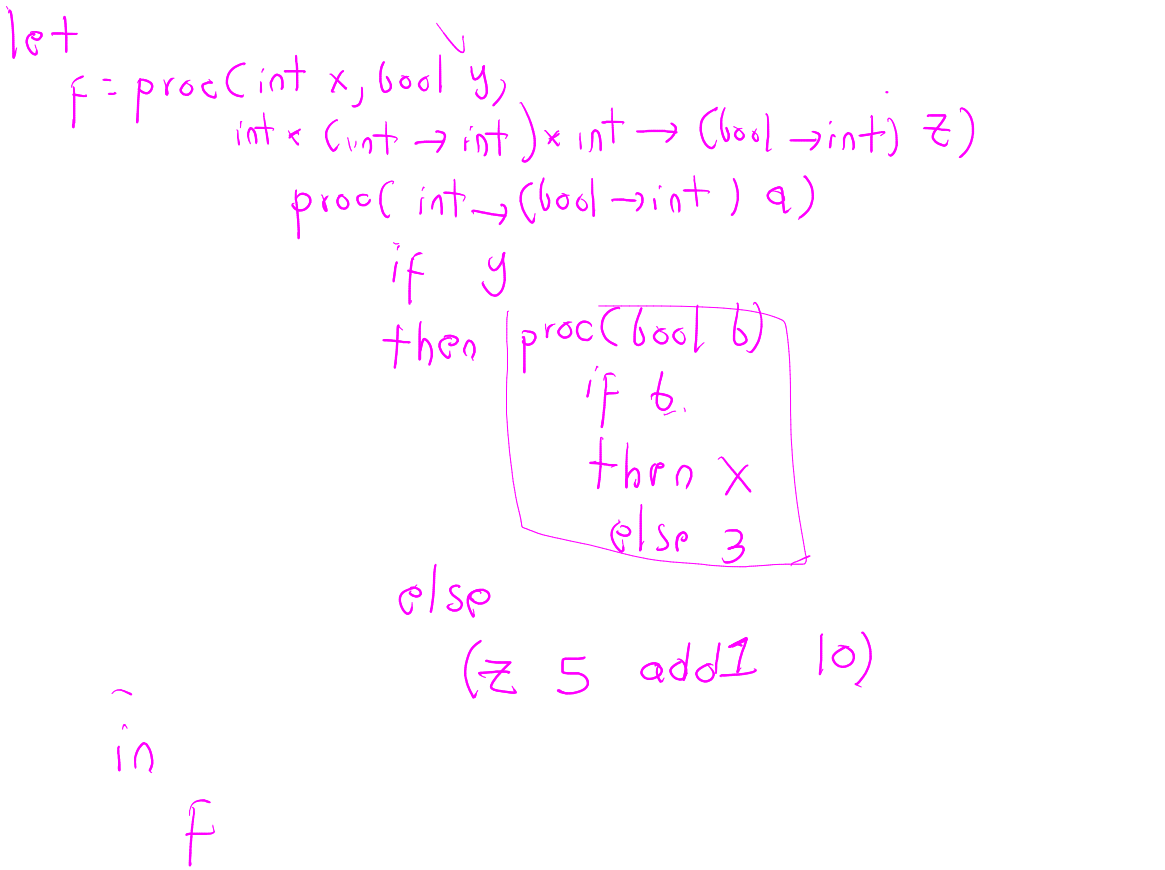
- $(int * (int -> bool) * (int -> (bool -> int)) -> (int -> bool)$
- $(int * bool * (int * (int -> int) * int -> (bool -> int)) -> (int -> (bool -> int))$
- $int * (bool -> (bool -> bool)) * (bool -> bool) -> (int * (bool -> (int -> bool))) -> (bool -> int)$




- $(int * (int -> bool) * (int -> (bool -> int)) -> (int -> bool)$
- $(int * bool * (int * (int -> int) * int -> (bool -> int)) -> (int -> (bool -> int))$
- $int * (bool -> (bool -> bool)) * (bool -> bool) -> (int * (bool -> (int -> bool))) -> (bool -> int)$



- $(int * (int -> bool) * (int -> (bool -> int)) -> (int -> bool)$
- $(int * bool * (int * (int -> int) * int -> (bool -> int)) -> (int -> (bool -> int))$
- $int * (bool -> (bool -> bool)) * (bool -> bool) -> (int * (bool -> (int -> bool))) -> (bool -> int)$

```
let
  F = proc (int x, bool->bool y, bool->bool z)
        proc(int a, bool->(int->bool) b)
          if and((y true), (z false))
          then proc(bool c) +(x, a)
          else proc(bool c)
                 if((b true) 5)
                 then 5
                 else +(x, a)
in
  F
```

((int -> (int->int))*(int->((int->int)->int)) -> (bool*(int->int)*((int->int)->int)->(int->int))

```
proc(int->(int->int) x)
  int->((int->int)->int) y)
    proc(bool a,
         int->int b
         (int->int)->int) c)
           proc(int e)
             if a, then
               +((c x 5) 8),
                 +(c proc(int j) *(j, 2))
                   *(7, e))
             else
               +(((y 9)
                  proc(int w) *(w, 8))
                 (b 8))
```

+ int*int->int

*

```
let g = proc (int x, int y, bool z, bool w)
            if <(x, y) then and(z, w)
            else w
    f = proc (int * int * bool * bool → bool h,
              int → bool p, int m, int n, bool o)
            if (p m) then false
            else (h n m (p n) (p * (2, m)))
    q = proc (int a)
            >(a, 4)
    i = false
in
    (f g q 1 5 i)
```

$t_g = (int \times int \times bool \times bool) \to bool$

$t_x = int \quad t_y = int \quad t_z = bool \quad t_w = bool$

$<(x, y)$ : $int \times int \to bool$ 　　$and(z, y)$ : $bool \times bool \to bool$

$t_F = ((int \times int \times bool \times bool \to bool) \times (int \to bool) \times int \times int \times bool) \to bool$

$t_h = (int \times int \times bool \times bool \to bool)$ 　　$t_o = bool$

$t_p = (int \to bool)$

$t_m = int$

$t_n = int$

$(p\ m)$

$t_p = t_m \to bool$

$t_p = int \to bool$

$(h\ n\ m\ (p\ n)\ (p * (2, m)))$

$t_h = t_n \times t_m \times bool \times bool \to bool$

$t_h = int \times int \times bool \times bool \to bool$

$(p\ n)$

$t_p = t_n \to bool$ 　　$int$

$(p * (2, m))$ 　　$int \times int \to int$

$t_q = int \to bool$

$t_i = bool$

$t_q = int$

$>(q, 4)$ 　　$int \times int \to bool$

proc

$(f\ g\ q\ 1\ 5\ i)$ 　　$t_F = ((int \times int \times bool \times bool \to bool) \times (int \to bool) \times int \times int \times bool) \to bool$

rator proc.

$t_F = t_g \times t_q \times int \times int \times t_i$

$t_F = ((int \times int \times bool \times bool) \to bool) \times (int \to bool) \times int \times int \times bool$

$\to bool$

$bool$