

CS421 HW03

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Problem 1.

for (* 1 *):

Things displayed on screen:

“

a

val f : int -> int = <fun>”

Reason:

“fun x->

...

...

)

)” is the function assigned to f.

So, “print_string \n\n” will be evaluated immediately.

“

a

”was printed on the screen.

Then the val of f is displayed, which is a integer to integer function. So,

“val f : int -> int = <fun>” was printed on screen

for (* 2 *)

Things displayed in screen:

“val g : int -> int = <fun>”

Reason:

The whole thing is the function assigned to g. So, “print_string “z\n” ” will not be evaluated now.

So, the only thing displayed on screen is “val g : int -> int = <fun>”

(* 3 *)

Things displayed in screen:

“z

bcd

z

val n : int = 6”

Reason:

first, evaluate g 0. So, “z\n” was printed first. Result is $y+2 = 2$. The result is passed to $f(g\ 0)$.

Then, evaluate f 2. “print_string “b” ” was evaluated. Then, $r = x+7$. Then, “c” was printed.

$x = 2$, so $x > 0$ is true for the if statement. So, “d\n” was printed. And the result is $2 * x = 4$.

Finally, g 4 was evaluated. “z\n” was printed. And the result is $y+2 = 6$; So the final thing printed is “val n : int = 6”.