HW3 Solutions

(*1*)
In line 1 we create the variable f that will print a new line and “a” and a new line, as well as hold an integer variable. The second defines a new function that takes in a variable x and will print a string “b” and then pass an integer value that (r) f will eventually hold. “b” will be printed and then it will print “c” because of the if statement. If x > 0 then “d” and a new line will be printed and f will hold 2*x else “e” and a new line will be printed and f will hold r which is x+7 from a few lines ago.

(*2*)
We define the function g which is passed a value y. The function will print “z” and a new line and g will hold the value y+2.

(*3*)
We define the function n that maps to the function g that is passed the evaluation of f with the input g evaluated with 0. G evaluated at 0 will return 2, and this is then passed to f. The function f defined above will then print a new line “a” and a new line. F will then print the string “b” and hold the value 2+7 = 9. Then control will go into the if statement at which point f will print “c” and because 2 is greater than 0 f will print “d” and a new line and now f now contains the value 2*x = 2*(2) = 4. 4 is passed to g and after evaluating it n will now contain the value 4+2 = 6. Thus this entire evaluation will print “z \n \n a \n bcd \n” and n will contain the value 6.