Quiz: Higher-order functions

Ziyan Maraikar

September 1, 2016

1. Given the definition of the `deriv` higher order function

   ```
   let deriv f =
     let dx=0.001 in
     fun x -> (f (x+.dx) -. f x) /. dx
   ```

   Show the evaluation of the following expression (in full) `(deriv (fun x -> x))0.0`

2. Use the above definition of `deriv` and the function

   ```
   let compose f g x = f (g)
   ```

   to write the function `second_deriv: (float -> float)-> float -> float` which calculates the second order numerical derivative of a function