CMSC 330, Spring 2018 Quiz 1

Instructions

• Do not start this quiz until you are told to do so.
• You have 15 minutes for this quiz.
• This is a closed book quiz. No notes or other aids are allowed.
• For partial credit, show all your work and clearly indicate your answers.

1. (2 points each) Give the type of the following OCaml expressions. If there is a type error, explain it.

   (a) [1;2]::[3;4]

   (b) let x = 5 in (true, x)

   (c) fun x y -> if x = y then x else y

   (d) fun f x y -> (f x)::y

2. (2 points each) Give an OCaml expression of the following types.

   (a) int * (string list)

   (b) int -> int -> int

   (c) 'a -> 'b -> ('b * 'a) list
3. (3 points each) What is the value of the following OCaml expressions?

(a) let rec f1 l a =  
    match l with  
    | [] -> a  
    | h::t -> f1 t (h::a)  
    in f1 [1;2;3] [7]

(b) let rec f2 l =  
    match l with  
    | [] -> []  
    | [h] -> [h*5]  
    | h::t -> (h*2)::(f2 t)  
    in f2 [1;2;3;4]