**CSCE 330 Spring 2005**

QUIZ 15

Assigned Tuesday 2005-04-19

Consider these functions:

```
(* Ullman *)
fun pre(x, nil) = nil
|   pre(x,L::Ls) = (x::L)::pre(x,Ls);

fun pow([]) = [[]]
|   pow(x::xs) =
    let
      val ps = pow(xs)
    in
      ps @ pre(x,ps)
    end;
```

What are:

1. `pre(1,nil)`? **Answer:**

   ```
   pre(1,nil);
   val it = [] : int list list
   ```

2. `pre(1,[nil]`? **Answer:**

   ```
   pre(1, [nil]);
   val it = [[1]] : int list list
   ```

3. `pow(nil)`? **Answer:**

   ```
   pow(nil);
   stdIn:29.1-29.9 Warning: type vars not generalized because of
      value restriction are instantiated to dummy types (X1,X2,...)
      val it = [[]] : ?.X1 list list
   ```

4. `pow([1])`? **Answer:**

   ```
   pow([1]);
   val it = [[],[1]] : int list list
   ```