SOLUTION NOTES

Introduction to Functional Programming 2002 Paper 13 Question 10 (AD)

(*a*)

```
fun merge f (l1,[]) = l1
  | merge f ([],l2) = l2
  | merge f (h1::t1,h2::t2) =
                          if f(h1,h2)
                             then h1::(merge f (t1,h2::t2))
                             else h2::(merge f (h1::t1,t2));
```

(*b*)

```
fun mergesort f []    = []
  | mergesort f [x] = [x]
  | mergesort f l   =
     let val k = length l div 2 in
      merge f (mergesort f (List.take(l, k)),
               mergesort f (List.drop(l, k)))
     end;
```

(*c*)

```
fun sumcomp (l1,l2) = (foldl op+ 0 l1) <= (foldl op+ 0 l2);
```

(*d*)

```
int list list -> int list list
```