CS 440 — CPS for Map and Fold Activity

Why

Now that you have seen CPS, you should try converting a few functions to that style. This will help you understand what is happening when a CPS program runs.

Code

For your reference, here are the classic definitions for `map` and `foldr`.

```
1  map f [] = []
2  map f (x:xs) = f x : map f xs
3
4  foldr f z [] = z
5  foldr f z (x:xs) = f x (foldr f z xs)
```

Questions

1. Convert `map` to CPS. Assume that its function argument also is written in CPS.

2. Convert `foldr` to CPS. Assume that its function argument also is written in CPS.

3. Write an aborting fold function `afoldr` that takes two continuations, one to abort the computation completely.

4. Show how your `afoldr` works by using it to take the product of the elements of a list, aborting with no multiplications if the list contains a zero.