List Processing II

Implement the following functions in a Scala worksheet:

1. An instructor maintains a list of lists of exam scores:

```
var cs152 = List(List(93, 89, 90), List(75, 76, 68), List(88, 82, 78))
```

The first list represents the scores of student 1, the second student 2, etc.

Write the following functions for processing lists of this form:

```
def avg(scores: List[Double]): Double = avg of scores

def avgAvg(scores: List[List[Double]]): List[Double] =
   list of averages for each student

def passing(scores: List[List[Double]]): List[Int] =
   list of positions in the list with avg >= 70

def sumSums(scores: List[List[Double]]):Double = sum of sums of all scores
```

2. A document is a list of words. A dictionary is a list of words. Implement:

```
def spellCheck(doc: List[String], dictionary: List[String]): List[String] = all words in
doc not in dictionary
```

3. Re-implement spellCheck without using recursion or iteration. I.e., use map, filter, reduce instead.

4. A polynomial can be represented as a list of monomials. A monomial is a pair of the form (coefficient, exponent). For example, $3x^2 - 5$ is:

```
List((3.0, 2.0), (-5.0, 0.0))
```

Implement:

```
evalMono(mono: (Double, Double), x: Double): Double = result of substituting x in mono

evalPoly(poly: List[(Double, Double)], x: Double): Double = resut of substituting x in
poly
```