

Selftest: Tuples and Frozen Sets

1. The following function calculates the mean and the variance of a list of numbers. Write a one-line statement to assign the results to the variables mean and variance.

```
def stats(lista):
    """ returns mean and variance of the list lista.
        assumes that lista is not empty """
    mean = sum(lista)/len(lista)
    variance = 0
    for element in lista:
        variance += (element-mean)**2
    return mean, variance/len(lista)

lista = [1,1,1,2,2,2,2,2,3,3]
```

2. Write a function that takes as input a tuple of three floating point numbers and returns the length of the vector with these coordinates, i.e. the square root of the sum of the squares of the coordinates.

```
def length(vector):
    """ calculates the length of the vector, assumed to
        be a three-tuple of floating point numbers or
        integers"""
```