In [19]:

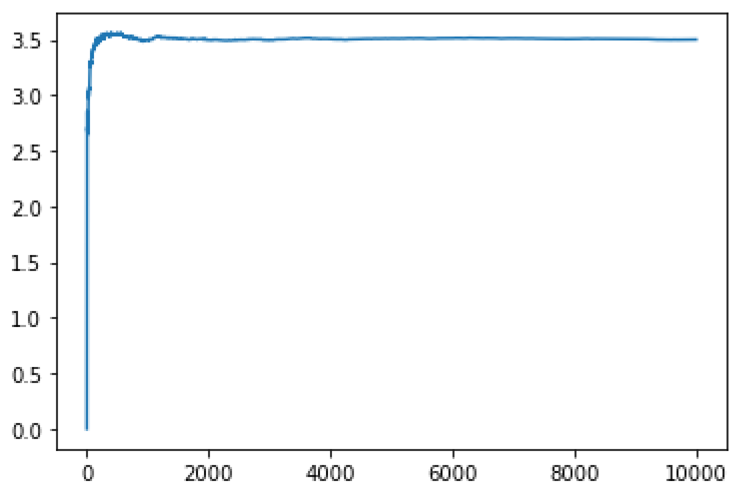
```
#Import libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [20]:

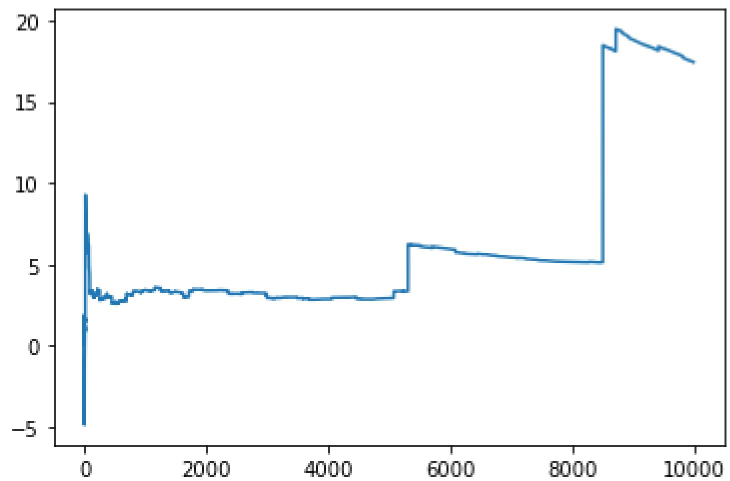
```
#Import data
data1 = pd.read_csv("radioactive_sample_1.txt",sep=" ",header=None)
data2 = pd.read_csv('radioactive_sample_2.txt',sep=" ",header = None)

#Transpose the data accordignly
data1=data1.T
data2=data2.T

#Drop the na values
data1 = data1.dropna()
data2 = data2.dropna()

#Convert to list
data1list= data1[0].tolist()
data2list= data2[0].tolist()
```

In [21]:

```
#Initialize list variables
data1mov = list()
data2mov = list()

#Loop through the values in data1list
for i in range(len(data1list)):
    data1mov.append(sum(data1list[:i])/(i+1))

#Plot the law of large numbers demonstration
plt.plot(data1mov)
plt.show()
```



In [22]:
```
#Loop through the numbers in data2list
for i in range(len(data2list)):
    data2mov.append(sum(data2list[:i])/(i+1))

plt.plot(data2mov)
plt.show()
```



C)

In [23]:
```
#Print the sample median, which appears to approach 3.5
print(np.round(np.median(data2list),decimals=6))
```

```
3.494066
```

We know that the best estimator of C for any value of m is equal to that value of m, thus the sample median of the position of the sensors should correspoond the the median of c.