
MATH 20 FALL 14 ASSIGNMENT 6, DUE MONDAY 10/27

You're encouraged to discuss these problems with other students in the class. Hand in the solutions to the book problems on paper at the beginning of class on Monday, 10/27. Send the code for part 2 by email to ewa.j.infeld.gr@dartmouth.edu by the same time.

1 Book problems

Section 7.1: Problem 5

Section 7.2: Problem 3

Section 8.1: Problems 1, 5, 6, 7, 8

Section 8.2: Problems 1, 7, 8

2 Law of large numbers code**2.1 Coin tosses**

Write code that:

- uses a function `ProportionOfTails(n)` that simulates tossing a coin n times and returns the proportion of times that tails turned up
- prints a list of results of `ProportionOfTails(n)` where n is equal to 10^i , for i from 1 to 6 (or as high as your computing power permits).

You can use this outline if you wish:

```
import random
def ProportionOfTails(n)
    instructions
    return ...

A=[]
for i in range(1,7):
    A.append(ProportionOfTails(10**i))
print A
```

2.2 Monte Carlo sampling

Modify your code from assignment 2, so that it prints a list of estimates for π with growing accuracy, again sampling n points, where n is equal to 10^i , for i from 1 to 6.