

## PROBLEM 6-1 (2/2 points)

Suppose you have a six sided die, with sides number 1 through 6, and you roll it several times.

As in the problems from [Lecture 3](#), answer each question in reduced fraction form - eg 1/5 instead of 2/10.

What is the probability that the first time you observe a 1 is on the second roll?

Final Check

Save

*You have used 1 of 2 submissions*

## PROBLEM 6-2 (2/2 points)

What is the probability that the first time you observe a 1 is on the third roll?

Final Check

Save

*You have used 1 of 2 submissions*

## PROBLEM 6-3 (10/10 points)

You observe that the probability of first seeing a 1 on the n-th roll decreases as n increases. You would like to know the smallest number of rolls such that this probability is less than some limit. Complete the Python procedure,

`probTest(limit)`, to compute this.

```
1 def probTest(limit):
2     rolls, prob = 1, 1.0 / 6
3     while prob >= limit:
4         prob *= 5.0 / 6
5         rolls += 1
6     return rolls
```

Correct

## Test results

[Hide output](#)

CORRECT

 `probTest(0.5)`

**Output:**

1

probTest(0.15)

**Output:**

2

probTest(0.12)

**Output:**

3

probTest(0.11)

**Output:**

4

probTest(0.1)

**Output:**

4

probTest(0.05)

**Output:**

8

probTest(0.01)

**Output:**

17

probTest(0.005)

**Output:**

21

probTest(0.001)

Output:

30

probTest(0.0001)

Output:

42

[Hide output](#)

Check

Save

You have used 1 of 10 submissions



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