

CC 2.4.1: Simulating Randomness

Simulating Randomness: Question 1

1/1 point (graded)

Use `random.choice` and `range` to generate a random integer from 0-9.

Enter your code here.

```
[random.choice(range(0,10))]
```

Simulating Randomness: Question 2

1/1 point (graded)

What will `random.choice(list([1,2,3,4]))` produce?

```
list([1,2,3,4])
```

```
[1,2,3,4]
```

A value from 1 to 4, selected at random.

correct

This code contains an error.

Simulating Randomness: Question 3

1/1 point (graded)

Which of the following lines of code takes the sum of 10 random integers between 0 and 9?

```
sum(random.sample(range(10),10))
```

```
sum(random.choice(range(10),10))
```

```
random.sample_sum(range(10), 10)
```

```
sum(random.choice(range(10)) for i in range(10))
```

correct

CC 2.4.2: Examples Using Randomness

Examples Using Randomness: Question 1

1/1 point (graded)

What will `random.choice(list((1,2,3,4)))` do?

Sample the tuple `(1,2,3,4)`.

Sample the list `[1,2,3,4]`.

Sample from the tuple `(1,2,3,4)`.

Sample from the list `[1,2,3,4]`.

correct

This code contains an error.

correct

Explanation

Although `list()` and `[]` both represent lists, `list((1,2,3,4))` casts the tuple as a list. `random.choice` then samples from the elements in the list.

Examples Using Randomness: Question 2

1/1 point (graded)

What is the law of large numbers with respect to histograms?

We expect the histogram of a sample to better reflect the distribution as the sample size increases.
correct

We expect the histogram of a sample to become more smooth as the sample size increases.

We expect the histogram of a sample to become more flat as the sample size increases.

All numbers in the histogram are very large, by law.

Examples Using Randomness: Question 3

1/1 point (graded)

What is the Central Limit Theorem?

The distribution of many random variables is approximately normal.

The distribution of many numbers is approximately normal.

The distribution of the sum of many random variables is approximately normal.
correct

The distribution of the sum of many numbers is approximately normal.

CC 2.4.3: Using the NumPy Random Module

Using the NumPy Random Module: Question 1

1/1 point (graded)

What does `numpy.random.random((5,2,3))` do?

Try `help()` if you aren't sure.

Generates a random value from the tuple `(5,2,3)`.

Generates a 5 x 2 x 3 NumPy array with random uniform values.

correct

Generates 3 values from the normal distribution with mean 2 and variance 3.

Using the NumPy Random Module: Question 2

1/1 point (graded)

What does `numpy.random.normal(1,2,3)` do?

Generates 3 samples with mean 1 and variance 2.

Generates 3 samples with mean 1 and standard deviation 2.

correct

Generates 3 samples with variance 1 and mean 2.

Generates 3 samples with standard deviation 1 and mean 2.

Generates 1 sample with mean 2 and standard deviation 3.

Using the NumPy Random Module: Question 3

1/1 point (graded)

What does `numpy.random.randint(1,5,(2,3))` do?

Samples a random value from 1, 5, and (2,3).

Samples a random integer from 1, 2, 3, and 5.

Generates a 2 x 3 array with random integers from 1-4.
correct

This code contains an error.

Using the NumPy Random Module: Question 4

1/1 point (graded)

What is the dimension

of `numpy.sum(numpy.random.randint(1,7,(100,10)), axis=0)`?

1

7

10

correct

100

10 x 100

100 x 10

CC 2.4.4: Measuring Time

Measuring Time: Question 1

1/1 point (graded)

Consider the following code:

```
start_time = time.clock()  
stop_time = time.clock()  
stop_time - start_time
```

What does this return?

An `int` of the seconds between the two times

A `float` of the seconds between the two times
correct

A `string` of the seconds between the two times

This code contains an error.

CC 2.4.5: Random Walks

Random Walks: Question 1

1/1 point (graded)

How are the displacements, the individual steps, in the random walk related to one another?

Any two consecutive displacements are independent of one another.
correct

Any two consecutive locations that the random walk visits are independent of one another.

Random Walks: Question 2

1/1 point (graded)

What does `np.concatenate` do?

Use `help()` if you need a hint.

Takes an iterable of `np.array`s as arguments, and binds them along the `axis` argument.
correct

Takes any number of `np.array` arguments, and binds them along the `axis` argument.

Takes an iterable of `np.array`s as arguments, and sums them along the `axis` argument.

Takes any number of `np.array` arguments, and sums them along the `axis` argument.