Untitled2

February 6, 2020

0.1 Homework 1 Python Part

0.1.1 Nhi Le - DATA 3401 - 02/06/2020

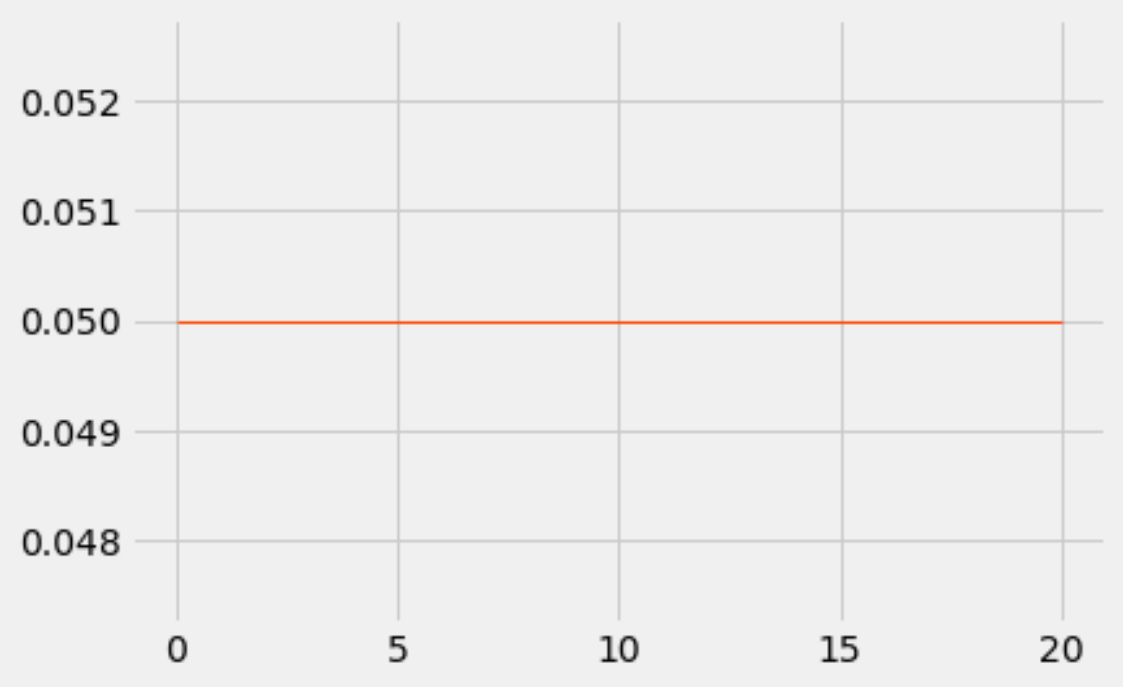
[24]:
```
# the usual starting block:
import numpy as np
%matplotlib inline
import matplotlib.pyplot as plt
plt.style.use('fivethirtyeight')
import math
from scipy import stats
```

[25]:
```
ec = np.arange(-2,22)
#1a
a = stats.uniform.cdf(7, 0, 20)
print(a)
```

```
0.35
```

[26]:
```
xvec = np.arange(0,20.9, 1)
plt.plot(xvec, stats.uniform.pdf(xvec, 0,20), linewidth = 1, c = 'orangered')
#plt.plot(np.array([0,0]), np.array([0, stats.uniform.pdf(0)]), c='orangered',␣
↪linewidth = .5)
```

[26]:
```
[<matplotlib.lines.Line2D at 0x1a23045190>]
```

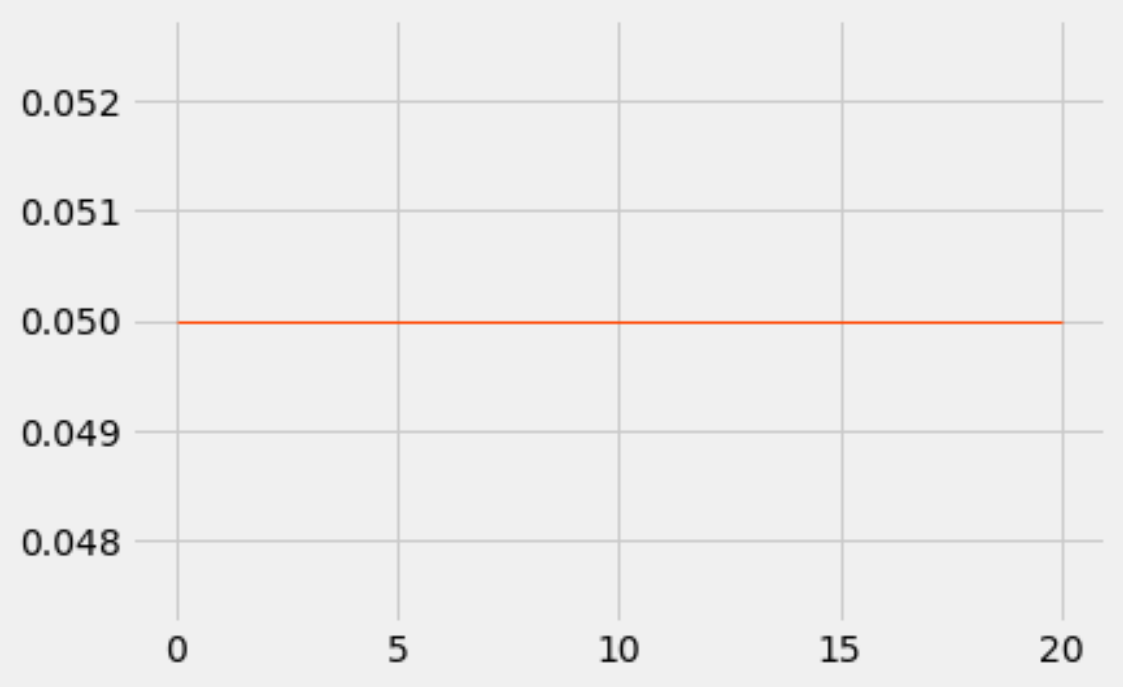


[27]:
```
#1b
b = 1 - stats.uniform.cdf(4, 0, 20)
print(b)
```

```
0.8
```

[28]:
```
xvec = np.arange(0,20.9, 1)
plt.plot(xvec, stats.uniform.pdf(xvec, 0,20), linewidth = 1, c = 'orangered')
```

[28]: [<matplotlib.lines.Line2D at 0x1a23099a50>]

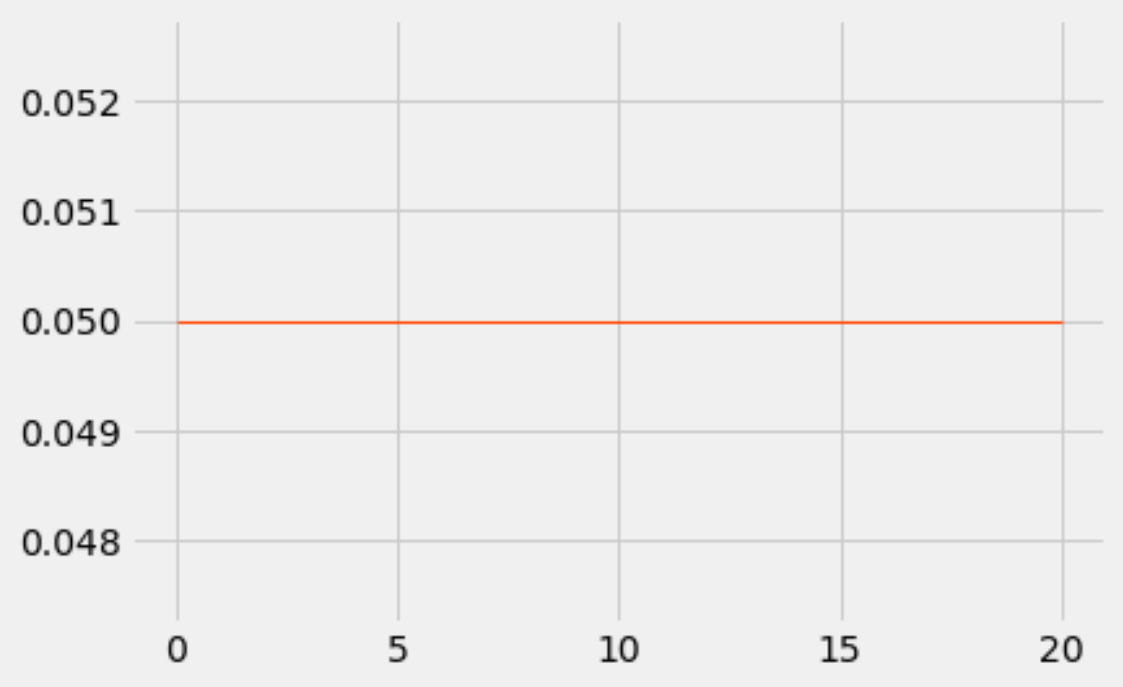


[29]:
```
#1c
c = 1 - stats.uniform.cdf(0, 0, 20)
print(c)
```

```
1.0
```

[30]:
```
xvec = np.arange(0,20.9, 1)
plt.plot(xvec, stats.uniform.pdf(xvec, 0,20), linewidth = 1, c = 'orangered')
```

[30]: [<matplotlib.lines.Line2D at 0x1a231e62d0>]

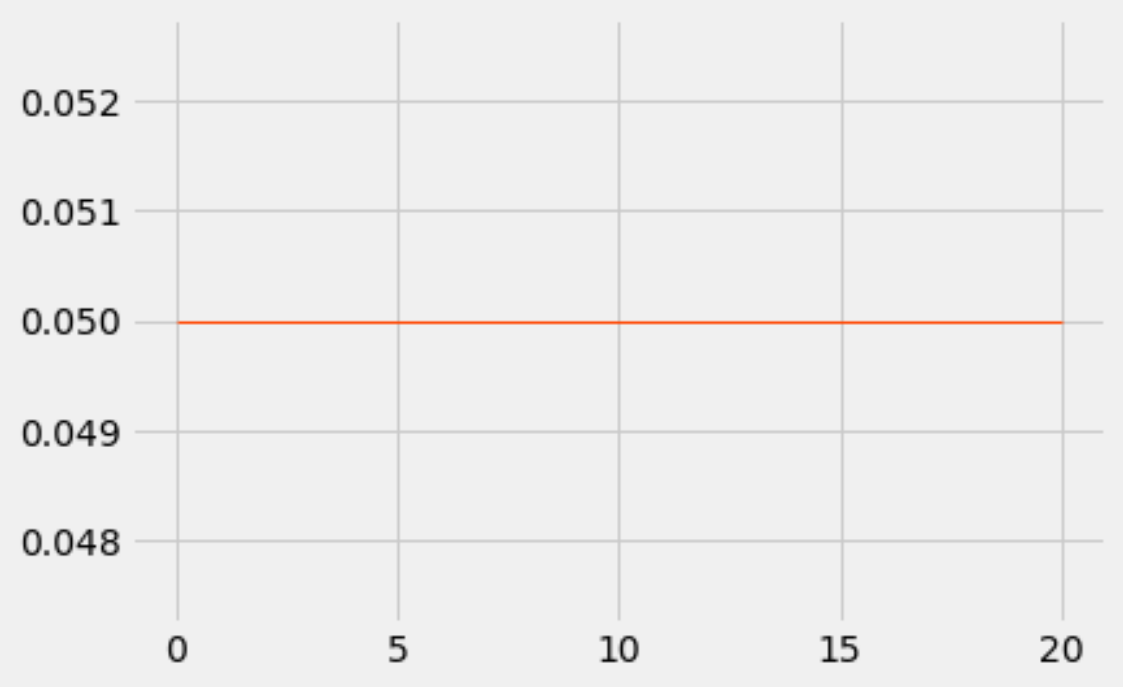


[31]:
```
#2
y = stats.uniform.cdf(17, 0, 20) - stats.uniform.cdf(1, 0, 20)
print(y)
```

```
0.7999999999999999
```

[32]:
```
xvec = np.arange(0,20.9, 1)
plt.plot(xvec, stats.uniform.pdf(xvec, 0,20), linewidth = 1, c = 'orangered')
```

[32]:
```
[<matplotlib.lines.Line2D at 0x1a23241b10>]
```

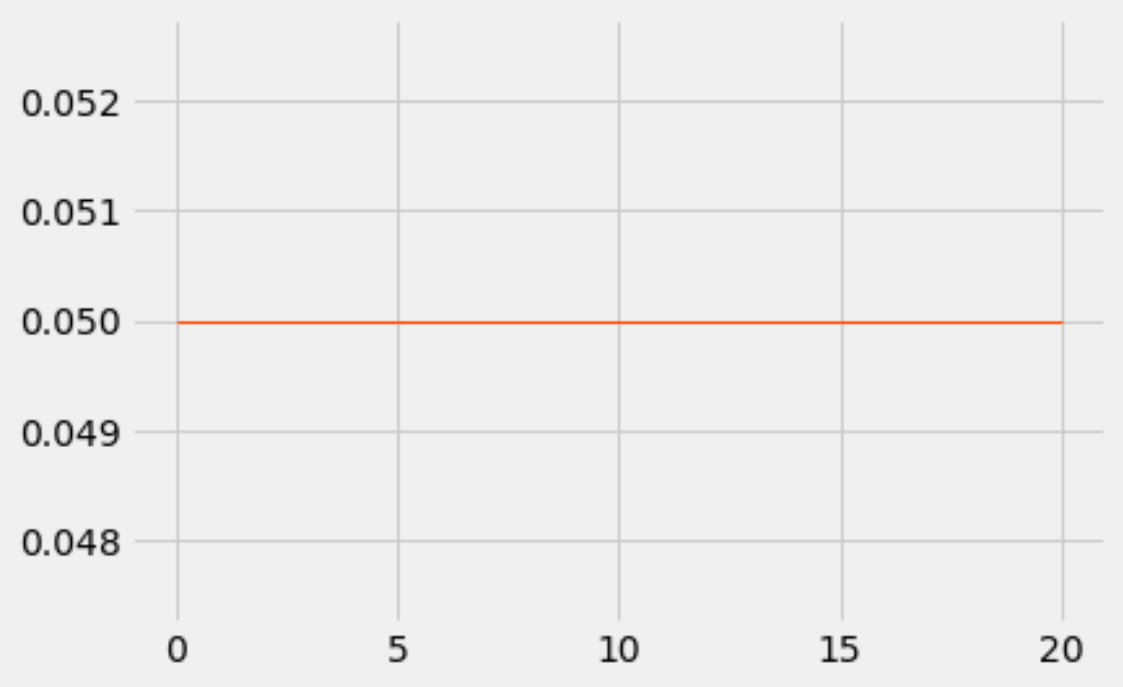


[33]:
```
#3
z = (stats.uniform.cdf(1, 0, 20) + (stats.uniform.cdf(15, 0, 20) -  stats.
 ↪uniform.cdf(12, 0, 20)))*20/15
print(z)
```

```
0.26666666666666666
```

[34]:
```
xvec = np.arange(0,20.9, 1)
plt.plot(xvec, stats.uniform.pdf(xvec, 0,20), linewidth = 1, c = 'orangered')
```

[34]: [<matplotlib.lines.Line2D at 0x1a2331c390>]


0.052
0.051
0.050
0.049
0.048
0
5
10
15
20