Discrete Uniform Distribution

> Problem statement

The number of books sold by a bookseller per day is given in 'bookseller.csv'.

Let X = Number of books sold by a bookseller per day

X is a Discrete Random variable (because it represents the book count). Let's see the distribution of X and answer the below questions.

1. Find the probability that more than (or equal to) 96 books will be sold on a given day
2. Find the probability that less than (or equal to) 92 books will be sold on a given day

```
import scipy.stats as stats
import pandas as pd
book=pd.read_csv('bookseller.csv')
book.head()
```

	S.No	Date	Number of Books Sold
0	1	01-01-2020	90
1	2	02-01-2020	100
2	3	03-01-2020	100
3	4	04-01-2020	97
4	5	05-01-2020	93

Next steps: Generate code with book | View recommended plots | New interactive sheet

```
import numpy as np
k=np.arange(90,101)
probs=stats.uniform.pdf(k,loc=90,scale=11)
probs
```

```
array([0.09090909, 0.09090909, 0.09090909, 0.09090909, 0.09090909,
       0.09090909, 0.09090909, 0.09090909, 0.09090909, 0.09090909,
       0.09090909])
```

```
#Ques.1
1-stats.uniform.cdf(96,90,11)
```

```
0.4545454545454546
```

```
#Ques.2
stats.uniform.cdf(93,90,11)
```

```
0.2727272727272727
```

```
Start coding or generate with AI.
```

Continuous Uniform Distribution

Problem statement

IT industry records the amount of time a software engineer needs to fix a bug in the initial phase of software development in 'debugging.csv'.

Let X = Time needed to fix bugs

X is a continuous random variable. Let's see the distribution of X and answer the below questions.

1. Find the probability that a randomly selected software debugging requires less than three hours
2. Find the probability that a randomly selected software debugging requires more than two hours
3. Find the 50th percentile of the software debugging time

```
debug=pd.read_csv('debugging.csv')
debug.head()
```

	Bug ID	Time Taken to fix the bug
0	12986	2.42
1	12987	2.03
2	12988	2.74
3	12989	3.21
4	12990	3.40

Next steps: Generate code with debug View recommended plots New interactive sheet

```
x=np.linspace(1,5,50)
probs=stats.uniform.pdf(x,1,4)
probs
```

```
array([0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25,
       0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25,
```

```
0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25,
0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25, 0.25,
0.25, 0.25, 0.25, 0.25, 0.25, 0.25])
```

```
#Ques.1: a randomly selected software debugging requires less than 3 hours
stats.uniform.cdf(3,1,4)
```

```
0.5
```

```
#Ques.2: a randomly selected software debugging requires more than 2 hours
1-stats.uniform.cdf(2,1,4)
```

```
0.75
```

```
#Ques.3: Find the 50th percentile of the software debugging time
stats.uniform.ppf(q=0.5,loc=1,scale=4)
```

```
3.0
```

Start coding or generate with AI.