Q1.1. Pavan kumar makes 65% of his free-throw attempts. If he shoots 15 free throws, what is the probability that he makes exactly 10?

In [19]:
```python
from scipy.stats import binom
binom.pmf(k=10,n=15,p=0.65)
```
Out[19]: 0.2123386834880357

Q1.2.Shivam flips a fair coin 6 times. What is the probability that the coin lands on heads 3 times or fewer?

In [22]:
```python
binom.cdf(k=3,n=6,p=0.5)
```
Out[22]: 0.65625

In [ ]: Q1.3.It is known that 65% of individuals support a certain law. If 10 individuals are randomly selected, what is the probability that between 3 and 6 of them s

In [23]:
```python
binom.cdf(k=6,n=10,p=0.65)-binom.cdf(k=3,n=10,p=0.65)
```
Out[23]: 0.4601487031476562

In [ ]: 2.Calculate Probabilities Using a Poisson Distribution
Q2.1. A store sells 4 apples per day on average. What is the probability that they will sell 6 apples on a given day?

In [24]:
```python
from scipy.stats import poisson
poisson.pmf(6,4)
```
Out[24]: 0.10419563456702102

In [ ]: Q2.2. A certain store sells seven footballs per day on average. What is the probability that this store sells four or less footballs in a given day?

In [25]:
```python
poisson.cdf(4,7)-poisson.cdf(0,7)
```
Out[25]: 0.17207972591651693

In [ ]: Q2.3. A certain store sells 15 cans of tuna per day on average. What is the probability that this store sells more than 20 cans of tuna in a given day?

In [27]:
```python
1-poisson.cdf(20,15)
```
Out[27]: 0.08297091003146029

Q3.1. Suppose a bus shows up at a bus stop every 20 minutes. If you arrive at the bus stop, what is the probability that the bus will show up in 8 minutes or less?

In [28]:
```python
from scipy.stats import uniform
uniform.cdf(x=8,loc=0,scale=20)-uniform.cdf(x=0,loc=0,scale=20)
```
Out[28]: 0.4

In [ ]: Q3.2.The weight of a certain species of frog is uniformly distributed between 15 and 25 grams. If you randomly select a frog, what is the probability that the

In [29]:
```python
uniform.cdf(x=19,loc=15,scale=10)-uniform.cdf(x=17,loc=15,scale=10)
```
Out[29]: 0.2

In [ ]: Q3.3.The length of an NBA game is uniformly distributed between 120 and 170 minutes. What is the probability that a randomly selected NBA game lasts more than

In [30]:
```python
1-uniform.cdf(x=150,loc=120,scale=50)
```
Out[30]: 0.4

4.Calculate Probabilities Using a Normal Distribution

In [ ]: Q4.1.A radar unit is used to measure speeds of cars on a motorway. The speeds are normally distributed with a mean of 90 km/hr and a standard deviation of 10 k

In [31]:
```python
from scipy.stats import norm
1-norm.cdf(100,90,10)
```
Out[31]: 0.15865525393145707

In [ ]: Q4.2.For a certain type of computers, the length of time bewteen charges of the battery is normally distributed with a mean of 50 hours and a standard deviatio

In [32]:
```python
norm.cdf(70,50,15)-norm.cdf(50,50,15)
```
Out[32]: 0.4087887802741321