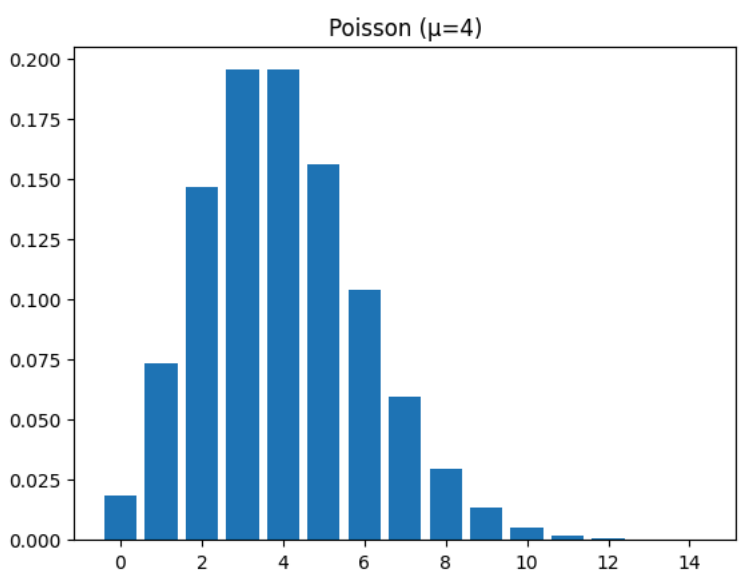
```
#Anova
from scipy.stats import f_oneway
data = [[1,2,2], [2,4,3], [4,2,2]]
f, p = f_oneway(*data)
print(round(p, 4))
```

```
0.2729
```

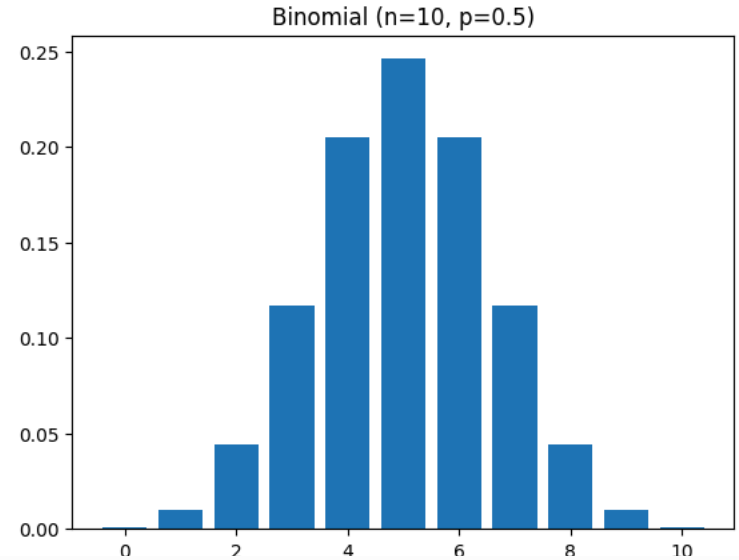
```
#Chi Square test
from scipy.stats import chisquare
obs = [8, 29, 40, 19, 4]
exp = [100 * x for x in [1/16, 4/16, 6/16, 4/16, 1/16]]
chi2, p = chisquare(obs, exp)
print(round(p, 4))
```

```
0.4708
```

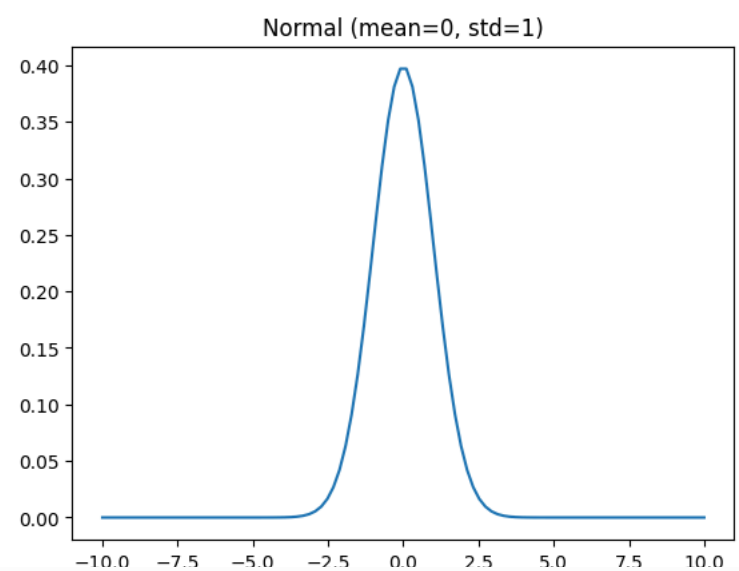
```
#Poisson
import matplotlib.pyplot as plt
from scipy.stats import poisson
x = range(0, 15)
plt.bar(x, poisson.pmf(x, mu=4))
plt.title("Poisson (μ=4)")
plt.show()
```




```
#binomial
import matplotlib.pyplot as plt
from scipy.stats import binom
x = range(0, 11)
plt.bar(x, binom.pmf(x, n=10, p=0.5))
plt.title("Binomial (n=10, p=0.5)")
plt.show()
```




```
#Normal
import matplotlib.pyplot as plt
from scipy.stats import norm
import numpy as np
x = np.linspace(-10, 10, 100)
plt.plot(x, norm.pdf(x, loc=0, scale=1))
plt.title("Normal (mean=0, std=1)")
plt.show()
```




```
#1) Two fair coins are flipped. As a result of this, tails and heads runs occurred where a tail run is a consecutive occurrence of at lea
from collections import Counter
outcomes = [''.join(x) for x in [('H','H'),('H','T'),('T','H'),('T','T')]]
tail_runs = [s.count('H') - ('HH' in s) for s in outcomes]
print(Counter(tail_runs))
```

```
Counter({1: 3, 0: 1})
```

```
#2)The length of alike metals produced by a hardware store is approximated by a normal distribution model having a mean of 7 cm and a st

from scipy.stats import norm
p = norm.cdf(6.14, 7, 0.35) - norm.cdf(5.36, 7, 0.35)
print(round(p, 4))
```

```
0.007
```

```
#3) The speeds of a number of bicycles have a normal distribution model with a mean of 83 km/hr and a standard deviation of 9.4 km/hr. F
from scipy.stats import norm
p = 1 - norm.cdf(95, 83, 9.4)
```

```
print(round(p, 4))
```

```
0.1009
```

```
#4)If a dice is thrown twice, what is the probability of not getting a one on either throw?
p = (5/6) * (5/6)
print(round(p, 4))
```

```
0.6944
```

```
#5)Two cards are drawn in succession from a pack of 52 cards, without replacement. What is the probability, that the first is a Queen ar
p = (4/52) * (3/51)
print(round(p, 4))
```

```
0.0045
```

```
#66)A coin is tossed four times, if H = head and T = tail, what is the probability of the tosses coming up in the order HTHH?
p = (0.5)**4
print(round(p, 4))
```

```
0.0625
```

```
#7)Determine the probability that a digit chosen at random from digits 1, 2, 3, 1 3 will be even.
digits = [1, 2, 3, 1, 3]
p = len([d for d in digits if d % 2 == 0]) / len(digits)
print(round(p, 4))
```

```
0.2
```

```
#8)What is the probability of rolling a sum of 7 with two six-sided dice?
p = 6/36
print(round(p, 4))
```

```
0.1667
```

```
#9)In a game with two eight-sided dice, what is the probability of rolling a double (both dice showing the same number)?
p = 8 / (8 * 8)
print(round(p, 4))
```

```
0.125
```

```
#10)lf a ten-sided die is rolled, what is the probability of rolling a prime number?
primes = [2, 3, 5, 7]
p = len(primes) / 10
print(round(p, 4))
```

```
0.4
```

Start coding or generate with AI.