1.

import matplotlib.pyplot as plt

Benz = [3367, 4120, 5539, 6020, 6620]

BMW = [4000, 3590, 4423, 4900, 4590]

Lexus = [5200, 4930, 5350, 6200, 6930]

seq = [2018, 2019, 2020, 2021, 2022]

plt.xticks(seq)

plt.plot(seq, Benz, '-\*', label='Benz')

plt.plot(seq, BMW, '-o', label='BMW')

plt.plot(seq, Lexus, '-^', label='Lexus')

plt.legend(loc='upper left', bbox\_to\_anchor=(1,1))

plt.tight\_layout(pad=7)

plt.title("Sales Report", fontsize=24)

plt.xlabel("Year", fontsize=14)

plt.ylabel("Number of Sales", fontsize=14)

plt.tick\_params(axis='both', labelsize=12, color='red')

plt.show()

2.

import matplotlib.pyplot as plt

import numpy as np

left = -2 \* np.pi

right = 2 \* np.pi

x = np.linspace(left, right, 100)

f1 = 3 \* np.sin(x)

f2 = np.sin(x)

f3 = 0.2 \* np.sin(x)

plt.plot(x, f1)

plt.plot(x, f2)

plt.plot(x, f3)

plt.show()

3.

import matplotlib.pyplot as plt

data1 = [1, 2, 3, 4, 5, 6, 7, 8]

data2 = [1, 4, 9, 16, 25, 36, 49, 64]

data3 = [1, 3, 6, 10, 15, 21, 28, 36]

data4 = [1, 7, 15, 26, 40, 57, 77, 100]

seq = [1, 2, 3, 4, 5, 6, 7, 8]

plt.subplot(2, 2, 1)

plt.plot(seq, data1, '-\*')

plt.subplot(2, 2, 2)

plt.plot(seq, data2, '-o')

plt.subplot(2, 2, 3)

plt.plot(seq, data3, '-^')

plt.subplot(2, 2, 4)

plt.plot(seq, data4, '-s')

plt.show()

4.

from collections import defaultdict

from random import randint

import matplotlib.pyplot as plt

n = 1000

results = defaultdict(int)

for \_ in range(n):

die\_1 = randint(1, 6)

die\_2 = randint(1, 6)

results[die\_1 + die\_2] += 1

plt.bar(results.keys(), results.values(), width=0.35, color='green')

plt.xlabel("values")

plt.ylabel("frequencies")

plt.show()

5.

import matplotlib.pyplot as plt

sorts = ["America", "Australia", "Japan", "Europe", "United Kingdom"]

fee = [10543,2105,1190,3346,980]

plt.pie(fee,labels=sorts,explode=(0,0,0.3,0,0), autopct="%1.2f%%")

plt.show()