import matplotlib.pyplot as plt  
%matplotlib inline  
plt.plot([1, 2, 3, 4, 5], [1, 2, 3, 4, 5])

import numpy as np  
x = np.linspace(0, 5, 10)  
y = x + 1  
plt.title("Линейная зависимость y = x + 1")  
plt.xlabel("x")   
plt.ylabel("y")   
plt.grid()   
plt.plot(x, y, "r--")

x = np.linspace(0, 10, 50)  
y1 = x  
y2 = [i\*\*2 for i in x]  
plt.title("Зависимости: y1 = x, y2 = x^2")   
plt.xlabel("x")   
plt.ylabel("y1, y2")   
plt.grid()   
plt.plot(x, y1, x, y2)

x = np.linspace(0, 10, 50)  
y1 = x  
y2 = [i\*\*2 for i in x]  
plt.figure(figsize=(9, 9))  
plt.subplot(2, 1, 1)  
plt.plot(x, y1)   
plt.title("Зависимости: y1 = x, y2 = x^2")   
plt.ylabel("y1", fontsize=14)   
plt.grid(True)   
plt.subplot(2, 1, 2)  
plt.plot(x, y2)   
plt.xlabel("x", fontsize=14)   
plt.ylabel("y2", fontsize=14)   
plt.grid(True)

fruits = ["apple", "peach", "orange", "bannana", "melon"]  
counts = [34, 25, 43, 31, 17]  
plt.bar(fruits, counts)  
plt.title("Fruits!")  
plt.xlabel("Fruit")  
plt.ylabel("Count")

import matplotlib.pyplot as plt  
from matplotlib.ticker import (MultipleLocator, FormatStrFormatter,  
AutoMinorLocator)  
import numpy as np  
x = np.linspace(0, 10, 10)  
y1 = 4\*x  
y2 = [i\*\*2 for i in x]  
fig, ax = plt.subplots(figsize=(8, 6))  
ax.set\_title("Графики зависимостей: y1=4\*x, y2=x^2", fontsize=16)  
ax.set\_xlabel("x", fontsize=14)   
ax.set\_ylabel("y1, y2", fontsize=14)  
ax.grid(which="major", linewidth=1.2)  
ax.grid(which="minor", linestyle="--", color="gray", linewidth=0.5)  
ax.scatter(x, y1, c="red", label="y1 = 4\*x")  
ax.plot(x, y2, label="y2 = x^2")  
ax.legend()  
ax.xaxis.set\_minor\_locator(AutoMinorLocator())  
ax.yaxis.set\_minor\_locator(AutoMinorLocator())  
ax.tick\_params(which='major', length=10, width=2)  
ax.tick\_params(which='minor', length=5, width=1)  
plt.show()

import matplotlib.pyplot as plt  
%matplotlib inline  
plt.plot()

plt.plot([1, 5, 8, 3, 10, 12])

plt.plot([1, 5, 10, 15, 20], [1, 7, 3, 5, 11])

x = [1, 5, 10, 15, 20]  
y = [1, 7, 3, 5, 11]  
plt.plot(x, y, label='steel price')  
plt.title('Chart price', fontsize=15)  
plt.xlabel('Day', fontsize=12, color='blue')  
plt.ylabel('Price', fontsize=12, color='blue')  
plt.legend()  
plt.grid(True)  
plt.text(15, 4, 'grow up!')

x = [1, 5, 10, 15, 20]  
y = [1, 7, 3, 5, 11]  
plt.plot(x, y, '--')

x = [1, 5, 10, 15, 20]  
y1 = [1, 7, 3, 5, 11]  
y2 = [i\*1.2 + 1 for i in y1]  
y3 = [i\*1.2 + 1 for i in y2]  
y4 = [i\*1.2 + 1 for i in y3]  
plt.plot(x, y1, '-', x, y2, '--', x, y3, '-.', x, y4, ':')

x = [1, 5, 10, 15, 20]  
y = [1, 7, 3, 5, 11]  
plt.plot(x, y, '--r')

plt.plot(x, y, 'ro')

x = [1, 5, 10, 15, 20]  
y1 = [1, 7, 3, 5, 11]  
y2 = [i\*1.2 + 1 for i in y1]  
y3 = [i\*1.2 + 1 for i in y2]  
y4 = [i\*1.2 + 1 for i in y3]  
plt.figure(figsize=(12, 7))  
plt.subplot(2, 2, 1)  
plt.plot(x, y1, '-')  
plt.subplot(2, 2, 2)  
plt.plot(x, y2, '--')  
plt.subplot(2, 2, 3)  
plt.plot(x, y3, '-.')  
plt.subplot(2, 2, 4)  
plt.plot(x, y4, ':')