

import matplotlib.pyplot as plt  
import numpy as np  
  
x = np.linspace(0, 10, 51)  
y = 2 \* x - 3  
  
plt.plot(x, y, 'bx')  
plt.show()  
  
plt.plot(x, y, 'r')  
plt.xlabel('Time (fortnights)')  
plt.ylabel('Distance (furlongs)')  
plt.title('My first graph')  
plt.show()  
  
time = np.linspace(0, 4 \* np.pi, 101)  
height = np.exp(- time / 3.0) \* np.sin(time \* 3)  
  
plt.plot(time, height, 'm-^')  
plt.plot(time, 0.3 \* np.sin(time \* 3), 'g-')  
  
plt.legend(['damped', 'constant amplitude'])  
plt.xlabel('Time (s)')  
plt.ylabel('height')  
plt.title('Damped oscillation')  
  
plt.show()



import matplotlib.pyplot as plt  
import numpy as np  
  
x = np.linspace(0, 10, 100)  
y1 = np.sin(x)  
y2 = np.cos(x)  
y3 = np.exp(x / 10)  
y4 = np.log(x + 1)  
y5 = np.tan(x)  
  
fig, ax = plt.subplots()  
  
ax.plot(x, y1, linestyle='-', color='b', label='sin(x)')  
ax.plot(x, y2, linestyle='--', color='r', label='cos(x)')  
ax.plot(x, y3, linestyle='-.', color='g', label='exp(x/10)')  
ax.plot(x, y4, linestyle=':', color='m', label='log(x+1)')  
ax.plot(x, y5, linestyle='-', color='y', label='tan(x)')  
  
ax.set\_title('Crazy Graph')  
ax.set\_xlabel('X')  
ax.set\_ylabel('Y')  
  
ax.legend()  
  
plt.show()