import matplotlib.pyplot as plt

import numpy as np

x = np.linspace(0, 10, 100)

y1 = np.sin(x)

y2 = np.cos(x)

fig, (ax1, ax2) = plt.subplots(2, 1, figsize=(10, 8))

ax1.plot(x, y1, label='sin(x)', color='blue', linestyle='-')

ax1.set\_title('Sine Function')

ax1.set\_xlabel('x-axis')

ax1.set\_ylabel('sin(x)')

ax1.grid(True)

ax1.legend(loc='upper right')

ax1.set\_xticks(np.arange(0, 11, 1))

ax1.set\_yticks(np.arange(-1, 1.5, 0.5))

ax1.set\_xticklabels([f'{i}' for i in range(11)])

ax1.set\_yticklabels([f'{i:.1f}' for i in np.arange(-1, 1.5, 0.5)])

ax1.annotate('Max Value', xy=(np.pi/2, 1), xytext=(np.pi/2+1, 0.8),

arrowprops=dict(facecolor='black', shrink=0.05))

ax2.plot(x, y2, label='cos(x)', color='red', linestyle='--')

ax2.set\_title('Cosine Function')

ax2.set\_xlabel('x-axis')

ax2.set\_ylabel('cos(x)')

ax2.grid(True)

ax2.legend(loc='upper right')

ax2.set\_xticks(np.arange(0, 11, 1))

ax2.set\_yticks(np.arange(-1, 1.5, 0.5))

ax2.set\_xticklabels([f'{i}' for i in range(11)])

ax2.set\_yticklabels([f'{i:.1f}' for i in np.arange(-1, 1.5, 0.5)])

ax2.annotate('Min Value', xy=(np.pi, -1), xytext=(np.pi+1, -0.8),

arrowprops=dict(facecolor='black', shrink=0.05))

plt.tight\_layout()

plt.savefig('line\_plot\_with\_annotations.png')

plt.show()