

例 2.7 Python 程序代码

```
import numpy as np
import matplotlib.pyplot as plt

x = np.linspace(0.0, 30, 100)
y1 = (60 - 4 * x) / 6
y2 = (252 - 12 * x) / 18
y3 = 0 * x + 8
y4 = 0 * x + 0
plt.axvline(x=9)

# 考虑第一级
plt.subplot(131)
plt.plot(x, y1, label=r'G-3')
plt.plot(x, y2, label=r'G-4')

plt.xlim((0.0, 22.0))
plt.ylim((0.0, 20.0))
plt.xlabel(r'$x_1$')
plt.ylabel(r'$x_2$')

plt.fill_between(x, y4, y3, where=(y3 > y4) & (x < 9.0), color='grey', alpha=0.5)
plt.grid(True, linestyle='-.')
plt.legend()
plt.show()

# 考虑第二级
plt.subplot(132)
plt.plot(x, y1, label=r'G-3')
plt.plot(x, y2, label=r'G-4')

plt.xlim((0.0, 22.0))
plt.ylim((0.0, 20.0))
plt.xlabel(r'$x_1$')
plt.ylabel(r'$x_2$')

y5 = np.minimum(y3, y1)
plt.fill_between(x, y5, y4, where=(y5 > y4) & (x < 9.0), color='grey', alpha=0.5)
plt.grid(True, linestyle='-.')
plt.legend()
plt.show()

# 考虑第三级
plt.subplot(133)
```

```
plt.plot(x, y1, label=r'G-3')
plt.plot(x, y2, label=r'G-4')

plt.xlim((0.0, 22.0))
plt.ylim((0.0, 20.0))
plt.xlabel(r'$x_1$')
plt.ylabel(r'$x_2$')

plt.grid(True, linestyle='-.')
plt.legend()
plt.show()
```