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import numpy as np
import matplotlib.pyplot as plt

def calculate_gain(w, R, C):
    return 20 * np.log10(1 / np.sqrt(1 + (w * R * C)**2))

R = 1000 # ohms
C = 1e-6 # farads

# Calcul de la pulsation w0
w0 = 1 / (R * C)

# Définition du tableau de fréquences
w = np.linspace(0.1 * w0, 10 * w0, 1000)

G = calculate_gain(w, R, C)

plt.figure()
plt.plot(w, G)
plt.xscale('log')
plt.xlabel('Fréquence (Hz)')
plt.ylabel('Gain (dB)')
plt.title('Gain d\'un circuit RC')
plt.grid(True)
plt.show()

```

