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In [3]: # creating Line graph
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

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In [4]: # import data
data = pd.read_csv('../data/maxpower.csv')
# print just top datas
print(data.head())
```

	R	V	I	P1	P2
0	10	0.36	0.034	0.01156	0.012960
1	20	0.68	0.032	0.02048	0.023120
2	30	0.97	0.031	0.02883	0.031363
3	40	1.24	0.030	0.03600	0.038440
4	50	1.49	0.029	0.04205	0.044402

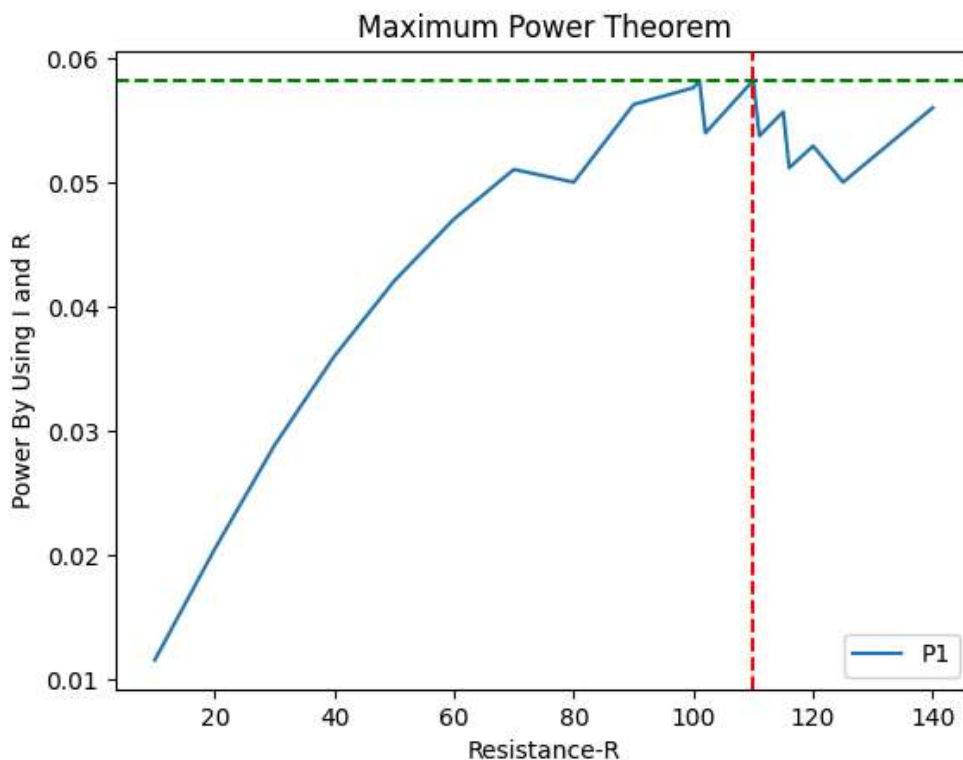
```
In [8]: # plot graph between R and P1

plt.plot(data['R'], data['P1'], label='P1')
# draw also horizontal line
max_power = data['P1'].max()
plt.axhline(y=max_power, color='g', linestyle='--')

# draw max Line in graph, take value when P2 is max
max_resistance = data['R'][data['P1'].idxmax()]
plt.axvline(x=max_resistance, color='r', linestyle='--')
# labelling
plt.xlabel('Resistance-R')
plt.ylabel('Power By Using I and R')
plt.title('Maximum Power Theorem')
plt.legend()

plt.show()

# Maximum power from P1
max_power1 = data['P1'].max()
print('Maximum power from V and R:', max_power)
print("Maximum Resistance:", max_resistance)
```



Maximum power from V and R: 0.05819
Maximum Resistance: 110

In [9]:

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# plot graph between R and P2

plt.plot(data['R'], data['P2'], label='P2')

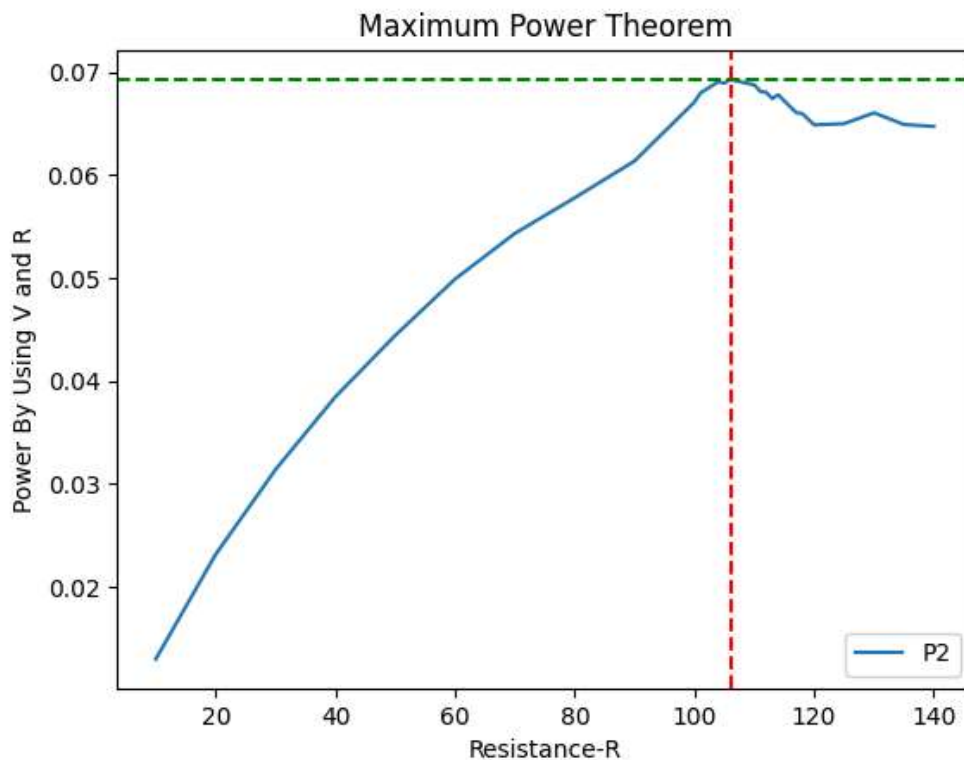
# draw also horizontal line
max_power = data['P2'].max()
plt.axhline(y=max_power, color='g', linestyle='--')

# draw max Line in graph, take value when P2 is max
max_resistance = data['R'][data['P2'].idxmax()]
plt.axvline(x=max_resistance, color='r', linestyle='--')

# labelling
plt.xlabel('Resistance-R')
plt.ylabel('Power By Using V and R')
plt.title('Maximum Power Theorem')
plt.legend()

plt.show()

# maximum power from P2
max_power2 = data['P2'].max()
print('Maximum power from I and R:', max_power)
print("Maximum Resistance:", max_resistance)
```



Maximum power from I and R: 0.069283962
Maximum Resistance: 106