

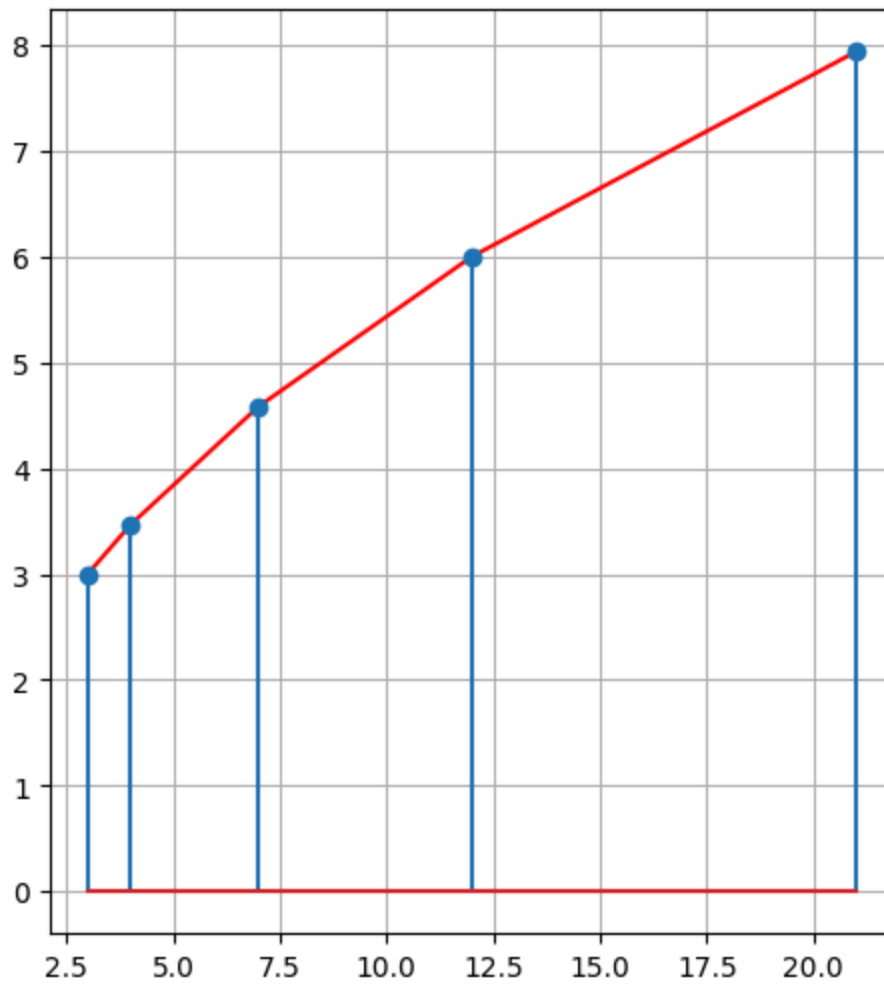
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In [1]: import numpy as np
import matplotlib.pyplot as plt
```

```
In [2]: def inferenceration(N, n, i0):
        return np.sqrt(3 * N), 10 * np.log10(np.sqrt(3 * N) ** n / i0)
```

```
In [9]: cluster_size = [3, 4, 7, 12, 21]
Q1 = []
SI3 = []
SI4 = []
```

```
In [10]: for N in cluster_size:
        Q, SI = inferenceration(N, 4, 6)
        Q1.append(Q)
        SI4.append(SI)
        Q, SI = inferenceration(N, 3, 6)
        SI3.append(SI)
```

```
In [13]: plt.figure(figsize=(12, 6))
plt.subplot(1, 2, 1)
plt.plot(cluster_size, Q1, color='red')
plt.stem(cluster_size, Q1)
plt.grid()
```



```
In [14]: plt.figure(figsize=(12,6))
plt.subplot(1, 2, 2)
plt.plot(cluster_size, SI4, color='red')
plt.stem(cluster_size, SI4)
plt.plot(cluster_size, SI3, color='red')
plt.stem(cluster_size, SI3)
plt.grid()
```

