**Comparison of Different Approaches**

**Task 3**

|  |  |  |
| --- | --- | --- |
| N | Brute Force | Recursive Method |
| 1000 | 0.001494 | 0.000219100 |
| 5000 | 0.031604 | 0.000853800 |
| 10000 | 0.120743 | 0.001686300 |
| 20000 | 0.465545 | 0.003491000 |
| 30000 | 1.045084 | 0.005322700 |
| 50000 | 2.908741 | 0.009511900 |
| 80000 | 7.395019 | 0.016217900 |
| 100000 | 11.580899 | 0.017529100 |
| 500000 | 340.903423 | 0.102304219 |

**Task 5**

|  |  |  |  |
| --- | --- | --- | --- |
| N | Brute Force | Recursive Method | Hybrid Method |
| 1000 | 0.001494 | 0.000219100 | 0.000105000 |
| 5000 | 0.031604 | 0.000853800 | 0.000412200 |
| 10000 | 0.120743 | 0.001686300 | 0.000872500 |
| 20000 | 0.465545 | 0.003491000 | 0.001759700 |
| 30000 | 1.045084 | 0.005322700 | 0.002649500 |
| 50000 | 2.908741 | 0.009511900 | 0.003745500 |
| 80000 | 7.395019 | 0.016217900 | 0.011151100 |
| 100000 | 11.580899 | 0.017529100 | 0.015138012 |
| 500000 | 340.903423 | 0.102304219 | 0.091847012 |