## Project 2 Executive Summary—Joseph Petitti

### Brute Force Algorithm time efficiency:

### Recursive Algorithm time efficiency:

Master Method, Case 2:

### Test Cases:

|  |  |
| --- | --- |
| Runtimes (seconds) | |
| **n** | **Recursive** | **Brute Force** | **Answer** | **Notes** |
| 4 | 4.2667e-5 | 1.0666e-5 | 45.122 | See “Test 1” |
| 12 | 8.2774e-5 | 6.5279e-5 | 2.828 | See “Test 2” |
| 1000 | 2.6222e-2 | 4.6988e-1 | 14.036 | 1000 random points (see “Test 3”) |
| 4 | 2.8587e-5 | 7.6800e-6 | 0.0 | Four identical points (see “Test 4”) |
| 5000 | 6.5678e-1 | 1.2942e+1 | 2.0 | 5,000 random points (see “Test 5”) |

The exact points tested are listed in “readme.txt”

These tests show experimentally what the time efficiency equations above showed theoretically: Except in the case of very small *n*, the recursive algorithm is much more time efficient.

