**Performance Analysis:**

Median run time of the test(in ms):

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Function | Design 1 (Initial with Polar) | Design 1 (Initial with Cartesian) | Design 2 | Design 3 | Design 5 (Initial with Polar) | Design 5 (Initial with Cartesian) |
| getX() | 273  Min: 260  Max: 295 | 12  Min: 12  Max: 13 | 258  Min: 239  Max: 283 | 3  Min: 2  Max: 3 | 238  Min: 235  Max: 239 | 3  Min: 2  Max: 3 |
| getY() | 233  Min: 225  Max: 243 | 33  Min: 32  Max: 37 | 230  Min: 209  Max: 244 | 2  Min: 1  Max: 2 | 210  Min: 208  Max: 211 | 2  Min: 2  Max: 3 |
| getRho() | 3  Min: 3  Max: 3 | 16  Min: 14  Max: 18 | 3  Min: 2  Max: 3 | 2  Min: 2  Max: 3 | 2  Min: 2  Max :3 | 2  Min: 2  Max: 3 |
| getTheta() | 3  Min: 3  Max: 3 | 1227  Min: 1213  Max: 1241 | 3  Min: 2  Max: 3 | 1138  Min: 1127  Max: 1157 | 2  Min: 2  Max: 3 | 1253  Min: 1230  Max: 1292 |
| getDistance() | 890  Min: 881  Max: 904 | 8  Min: 7  Max: 8 | 843  Min: 801  Max: 869 | 3  Min: 3  Max: 4 | 825  Min: 802  Max: 852 | 4  Min: 3  Max: 4 |
| rotatePoint() | 1318  Min: 1277  Max: 1398 | 802  Min: 771  Max: 831 | 1208  Min: 1189  Max: 1233 | 801  Min: 800  Max: 802 | 1253  Min: 1207  Max: 1291 | 846  Min: 808  Max: 874 |
| Total Run Time | 2721  Min: 2684  Max: 2770 | 2098  Min: 2099  Max: 2120 | 2545  Min: 2387  Max: 2593 | 1949  Min: 1940  Max: 1966 | 2531  Min: 2462  Max: 2567 | 2110  Min: 2056  Max: 2177 |