| Size    | #    | Lower<br>bound | Permutation GA |        | Hybrid GA |        | Selfish Gene Algo. |        |
|---------|------|----------------|----------------|--------|-----------|--------|--------------------|--------|
|         |      |                | best           | mean   | best      | mean   | best               | mean   |
| 7 x 7   | 7 1  | 435            | 464            | 480.9  | 450       | 460.7  | 437                | 463.1  |
|         | 7 2  | 443            | 477            | 501.5  | 461       | 473.8  | 460                | 481.9  |
|         | 7 3  | 468            | 503            | 535.2  | 489       | 511.5  | 501                | 516.7  |
|         | 7 4  | 463            | 500            | 514.4  | 472       | 485.9  | 478                | 494.6  |
|         | 7 5  | 416            | 442            | 466    | 438       | 456.5  | 433                | 450.1  |
| 10 x 10 | 10 1 | 637            | 715            | 741.3  | 687       | 700.6  | 699                | 722.4  |
|         | 10 2 | 588            | 642            | 665.2  | 611       | 630.6  | 622                | 646.5  |
| 15 x 15 | 15 1 | 937            | 1013           | 1039.7 | 967       | 989.5  | 995                | 1020.6 |
| 20 x 20 | 20 1 | 1155           | 1295           | 1315.7 | 1258      | 1315.3 | 1267               | 1294.4 |