Global convexity (fitness-distance/similarity correlations) tests

For each instance generate 1000 random local optima obtained from random solutions using greedy local search. For each solution calculate its similarity either to a very good solution or the average similarity to all other local optima. As the good solution use two options: (1) the best out of the 1000 local optima, (2) a very good solution generated by another (best so far) method. Make charts: x-axis – value of the objective function, y-axis (average) similarity. In the results with similarity to a single good solution do not include this solution itself (it would be an outlier with 100% similarity to itself).

Use (separately) two measures of similarity:

- The number of common edges.
- The number of common selected nodes.

Finally we have 12 charts: 2 instances, 3 versions of similarity (average similarity, similarity to the best out of 1000 local optima, similarity to a very good solution generated by the best method so far), 2 similarity measures (either common edges or common selected nodes).

For each chart calculate also the correlation coefficient.