

1. For an acyclic graph, PPC subsumes CPC.

First, PPC requires that all prime paths are covered by the TR. Assume by way of contradiction that PPC does not cover all simple paths. Let S be a simple path not covered by PPC. S must either be a prime path itself or is a subpath of a prime path. In the first case, S must be satisfied to satisfy PPC, in the second case, the prime path that S is a subpath of must be covered by the TR, therefore S must also be covered. Since TR_{PPC} covers S in both cases, there is a contradiction. Therefore PPC covers all simple paths.

Since the graph is acyclic, it has no cycles. Therefore all prime paths are from the source to the terminal. Therefore all prime paths are the longest paths of the graph, which in turn covers all of the simple paths of the graph. Therefore, all of the paths are covered from source to terminal. Therefore, the complete path is covered.

So PPC subsumes CPC in an acyclic graph.