vngrape

Vertex Name Centered additions to GRAPE

Version 1.0

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Chapter 1

The vngrape Package

This chapter describes the GAP package vngrape. It builds on the package GRAPE.

1.1 Basic functions

1.1.1 VNI2N

▷ `VNI2N(`*graph, index_or_list_of_indices*`)` (function)

Converts all indices in x to vertex names.

1.1.2 VNN2I

▷ `VNN2I(`*graph, name_or_list_of_names*`)` (function)

Converts all names in x to its indices.

1.2 Copied from GRAPE

These function are similar to functions in GRAPE, but accepting input as vertex names instead of vertex indices. Not all functionality is available, though.

1.2.1 VNAddedEdgeOrbit

▷ `VNAddedEdgeOrbit(`*graph, edge_by_names*`)` (function)

Function that returns the graph g but with the orbit of the edge e added. The elements of e must be vertex names of g.

1.2.2 VNAdjacency

▷ `VNAdjacency(`*graph, vertex_name*`)` (function)

Function that returns the vertex names of neighbors of x in a graph g. x must be a vertex of g given by its name.

1.2.3 VNIsEdge

▷ VNIsEdge(*graph, edge_by_names*) (function)

Function that returns whether e (a list of two vertex names) is an edge of the graph g.

1.2.4 VNUndirectedEdges

▷ VNUndirectedEdges(*graph*) (function)

Function that returns a list of the undirected edges of a graph g. The edges are described by the names of its vertices.

1.2.5 VNDistance

▷ VNDistance(*graph, vertex_or_list, vertex_or_list*) (function)

Function that returns the distance in a graph between two vertices or a vertex and a list of vertices or two lists of vertices. The vertices are given by their names.

1.2.6 VNDistanceSet

▷ VNDistanceSet(*graph, d_or_d's, vertex_or_list*) (function)

Function that returns the set of vertices such that their distance to v is d (if d is a number) or in d (if d is a list of distances). The vertices of the set are given by their names.

1.2.7 VNInducedSubgraph

▷ VNInducedSubgraph(*graph, list_of_names*) (function)

Function that returns the subgraph of g induced by the vertices whose name is in the list l

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