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Distance preserving graphs.

Let $G = (V, E)$ be a graph and let $d_G(\cdot, \cdot)$ be the distance function of G . Call a subgraph H of G *isometric* if $d_H(v, w) = d_G(v, w)$ for all vertices v, w of H . A connected graph G is said to be *distance preserving*, abbreviated to dp, if it has an isometric subgraph with k vertices for all k from 1 to $|V|$. Dp graphs have appeared in research on network clustering, but their study is relatively new. We will discuss various properties of dp graphs, including when certain graph operations such as taking products or adding a simplicial vertex preserve being dp. We will also present some conjectures about these graphs. (Received July 15, 2015)