# Characterizing minimally 3-connected graphs

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A 3-connected graph is minimally 3-connected if removal of any edge destroys 3-connectivity. In 1986 Dawes gave a necessary and sufficient characterization for the construction of minimally 3-connected graphs starting with the 3-wheel. Two distinct edges $e$ and $f$ are bridged if they are subdivided by vertices $x$ and $y$, respectively, forming paths of length 2, and $x$ and $y$ are joined by an edge. A vertex $w$ and an edge $e$ are bridged if $e$ is subdivided by vertex $x$, and $w$ and $x$ are joined. A triad is added when a new vertex is introduced and joined to three distinct vertices in the graph. Using these three operations, and what he called compatible sets, Dawes gave a necessary and sufficient condition for the construction of minimally 3-connected graphs. We translate Dawes' operations to edge additions and vertex splits, thereby obtaining another characterization of minimally 3-connected graphs.