

Quest 7 Graph Theory 9/21/2011

Let e be an edge of a connected graph G . The following statements are equivalent:

- (1) e is a bridge of G .
- (2) e is not on any cycle of G .
- (3) There exist points u and v of G such that edge e is on every path joining u and v .
- (4) There exist a partition of $V(G)$ into subsets U and W such that for any points $u \in U$ and $w \in W$, the edge e is on every path joining u and w .

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[Work directly from definitions, without using and other results from 2.3]

If G is a block with $\delta > 2$, then there is a point v such that $G - v$ is also a block.

