



## Why

We characterize chordal graphs.<sup>1</sup>

## Definition

Let  $(V, E)$  be an undirected graph. A set  $S \subset V$  is a *vertex separator* for two vertices  $v, w$  (or a  *$vw$ -separator*) if  $v$  and  $w$  are disconnected in the subgraph induced by  $V - S$ . There always exists a vertex separator for two nonadjacent vertices.

A vertex separator is a *minimal vertex separator* for two vertices if no proper subset of it is a vertex separator for those vertices. Another term for vertex separator is *cutset*. Similarly, one for minimal vertex separator is *relatively minimal cutset*.

## Example

For example, for the graph in Figure 1,  $\{c, e\}$  is a minimal *ag*-separator and  $\{b, c, e\}$  is a minimal *ad*-separator. A minimal vertex separator may contain another minimal vertex separator if they are minimal for different pairs of vertices.<sup>2</sup>

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<sup>1</sup>Future editions will expand.

<sup>2</sup>See Vandenberghe and Andersen, 2014.

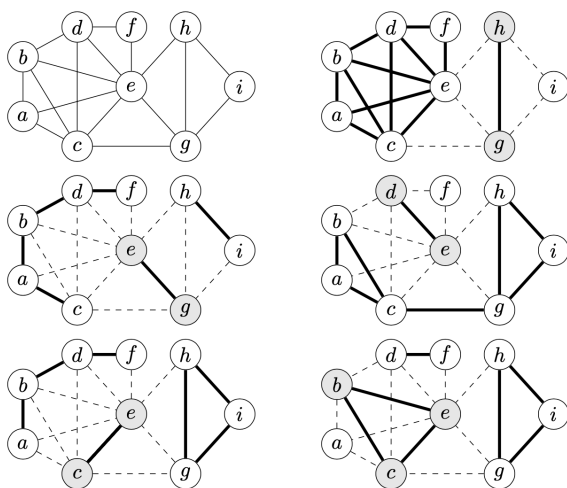


Figure 1: A chordal graph and its five minimal cutsets.

