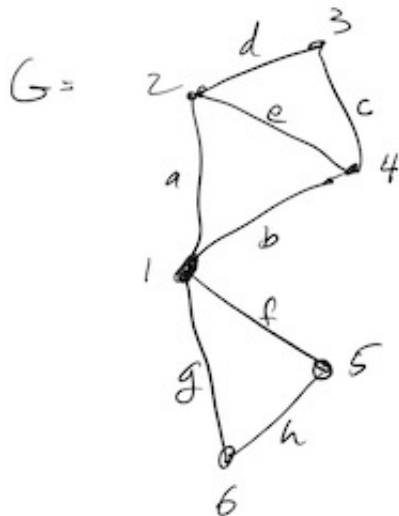


Worksheet for graph theory lecture 13

Given the graph below, draw the following edge induced subgraphs (see lecture 9):

$$G[\{a, b, e\}], G[\{a, b, f, g, h\}]$$

Also, with the same graph, find subsets $S_1, S_2 \subset E[G]$ such that $G[S_1], G[S_2]$ are the blocks of G .



Problem (corrected!): Suppose that v is a cut vertex in a graph G , and let $H_1, H_2, H_3, \dots, H_k$ be the different components in $G - v$. Show that if $C \subset G$ is a cycle containing v , then C must be entirely contained in one of the components -- i.e. $C \subset H_i$ for some i .

Problem: Show that if e is an edge in G , then G is nonseparable if and only if $G[[e]]$ is nonseparable.

Problem: Show that if G is nonseparable, then any two edges lie on a common cycle (use the subdivision strategy of the video).